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December, 1934

"Let There Be Sight"

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The Broad Basis for Prevention of Blindness*

Edward Jackson, M.D.

THE organized forces engaged in the struggle to conserve sight are constantly finding new ramifications and new opportunities in this field

COMING together in annual meeting, as workers for a common purpose, it is well that we who daily are busy with details and individuals should be reminded of the greatness of the work in which we are engaged and its broad importance to our fellow men. Blindness has been known from time immemorial. The blind poet of Greece, the Code of Hammurabi, the ancient papyri of Egypt, the allusions to blindness in the Pentateuch, and in the New Testament, show that the existence of blindness and the gravity of such a disability were well known to ancient writers and to those for whom they wrote.

The importance of blindness has been understood and taught from generation to generation, has loomed great and awful in the traditions and records of historic time. It still may drag down its victims to poverty, dependence or defeat; and threatens to each coming generation a sad proportion of difficult, limited and blighted lives. The wide, popular understanding and dread of blindness imply a wide interest and support for its prevention: support and approval that should now be as wide and as earnest as the fear and pity that blindness has excited in the past.

Out of the ocean of oblivion arose the belief in magic—a belief in the existence of unknown powers that could be propitiated by sacrifices and charms; from this belief grew religion, with its priests, and medicine, beginning with Imhotep in Egypt and Hippocrates in Greece as its first teachers. From ancient sacri-

*Presented at the Annual Meeting of the National Society for the Prevention of Blindness, December 6, 1934, in New York City.

fices and incantations it has been a long advance to the draining of malarial swamps and the building of hospitals. The eye of Horus became in Egypt the emblem of loyalty and sacrifice. The value of sight created the sun myths that grew up in every quarter of the world. All through human history the importance of vision has been recognized. Today, with our forward look, we turn from miracles to restore sight, to the new wisdom of preserving sight and keeping it at the highest possible degree of efficiency.

"Babies' Sore Eyes"

It has already been proved by an older generation, some of whom are still among us, that the prevention of blindness is a perfectly rational and practical enterprise. Cr  d   published in 1884 his plan for preventing ophthalmia neonatorum. The medical profession tested it and, in 20 years, has proved its value. A young mother bringing her first-born, before it was a month old, to ask for something to be done to save it from lifelong blindness, caused by ophthalmia neonatorum, was a most pathetic sight. Every ophthalmologist who had to reply "It is too late," realized that prevention of this kind of blindness was a most urgent need; and he did not hesitate to demand legislation and to undertake public education to bring it about. Twenty-seven years ago, almost 30 per cent of the children entering schools for the blind in the United States were blind from birth infection. Now, less than seven per cent of new entrants in schools for the blind lost their sight through this infection. Though this is a remarkable reduction, we cannot feel our goal has been reached until the percentage is infinitesimal.

Trachoma

More than 3,000 years ago trachoma was causing blindness in Egypt. Some of the remedies then used in its treatment are still relied upon to check its course. When Napoleon invaded Egypt, and a British army was sent there to drive him out, both armies came back bringing so much trachoma to France and England that it was more common for a whole generation than it had ever been before. In a single battalion of infantry returning from Egypt, 636 had ophthalmia, a mixed infection of purulent ophthalmia and

trachoma; and of these 50 were dismissed, blind in both eyes, and 40 blind in one eye. The ophthalmias thus imported led to the founding of the infirmary that grew into the Royal London Ophthalmic Hospital (Moorfields).

It has been learned by those who have had much to do with trachoma that spread of infection can be prevented if the affected eyes are regularly treated. It is the untreated eyes that infect others; and this fact has been the basis of control of the disease. In London, in 1904, the children in the County Councils Schools who were affected with trachoma were taken out of these schools and placed in two trachoma schools, under a regimen of regular treatment of the diseased conjunctiva. At first the schools were filled—625 pupils—but later the new cases almost ceased to appear. In 1918, since there were only 186 entries, one of the schools was closed. In 1921 it was found that there were not enough cases of trachoma to fill even one school, and children from other schools were brought in. In 1924 an epidemic of acute trachoma was discovered near the docks, 215 cases in all. These were brought under treatment in the school at Swanley. The epidemic was confined to the original area of its outbreak, and ceased by the end of the year. In the five years 1925–1929, only 104 cases were found in a school population that averaged 650,000. In 1931, N. Bishop Harman, who had been active in the whole campaign for prevention of blindness, could well write: "Trachoma is practically extinct in England."

The history of trachoma in the British and American forces in the World War, as told by our late colleague, Col. George S. Derby, is equally inspiring. Of several thousand men brought into France from Egypt to serve in the labor companies, 19 per cent had active trachoma. Among over 100,000 from China, more than five per cent had active trachoma. The trachoma ranks were also recruited from other parts of Africa. The danger of spreading this disease was promptly recognized and efficiently met. All cases of trachoma were segregated in "trachoma companies"; the doubtful cases were sent into other companies; and the uninfected in "clean companies." Every day the trachoma companies were lined up for treatment, and given clean towels in exchange for their dirty ones which they turned in. "No case came to notice of

the disease's having been spread to the civilian population, or to troops." The sufferers from trachoma came out of the war with better eyes than they had when they were brought to France. Among the soldiers brought to France from Africa, India, or eastern Europe there was little trachoma. These men had previously been under military discipline, including medical inspection and care.

In America, trachoma has been a problem only in certain groups. In the Philadelphia clinics, forty years ago, practically all the recent cases were in immigrants who came for treatment with a history of having arrived by steerage from Europe within the past few months. Except for such importations, trachoma has been rare in our northeastern states. But in the southern Appalachian mountains, trachoma has become a serious cause of blindness. It has extended from that region across southern Indiana, Illinois, Missouri, Arkansas and Oklahoma. In Kentucky, the systematic attack on trachoma, made by the late Dr. J. A. Stucky, continued and extended westward by the United States Public Health Service, has fairly completely controlled trachoma.

Among Indians living on reservations, trachoma has become almost universal. The only Indians in the United States that were found free from trachoma, by Harrison, were the relatively small number of Chippewas, living on the north shore of Lake Superior, and engaged in lumbering and fishing. In Colorado and the Pacific Northwest the worst cases of trachoma of late years have been among Indians.

In the South the Negroes, even those of mixed blood, are almost entirely immune to trachoma. From the rarity of trachoma in Switzerland it was thought that high altitudes prevented it. But in the Rocky Mountains this is not the case. It can be as bad there, one or two miles above, as at sea level. The conditions that favor trachoma are low standards of living, especially overcrowding—whether in tepees, mountain cabins, or city tenements—and lack of personal cleanliness.

An interesting epidemic of conjunctivitis in horses, cattle and dogs in California was studied by Eaton. In a valley 5,000 feet above sea level, this epidemic had followed the bringing in of horses from Illinois and Kentucky, where trachoma was common;

and a biting fly appeared in the valley at the same time as the horses. This form of follicular conjunctivitis was marked by scar tissue, entropion, trichiasis, pannus, corneal ulceration and opacity. Pathologic identity of this disease with trachoma has not been established; but this is also true of many other conditions that were supposed to show the true nature of trachoma, such as the Noguchi *Bacterium granulosis* and the inclusion bodies of Prowazek. There is room and need for wide biologic research with regard to cause and essential nature of trachoma.

General Diseases Affecting Sight

Among the blind in my state of Colorado, at least one, and probably two, per cent are blind from smallpox. I have reported the case of an Irish woman who had never been vaccinated, and never had smallpox until she was 75; and then lost both eyes from it. In southern Colorado, in a region where there are few doctors, there are many Mexican sheep herders. Among these, cases of smallpox occur almost every year. Such isolated cases have started epidemics in Denver, where the public activities of the League for Medical Freedom and Christian Scientists have hindered vaccination, as much as the "conscientious objectors" have in England. Before vaccination became general in Europe, smallpox caused one-eighth to one-sixth of the blindness, as it still does in parts of Russia and China.

Diseases of childhood, such as measles, scarlet fever and diphtheria, and occasionally mumps and whooping cough, may cause blindness. This fact should be remembered and emphasized by all who are working in the general promotion of public health.

Statistics on Causes of Blindness

Blindness is thought of as the affliction of age. This is not because Shakespeare began his description of the second childhood as "sans teeth, sans eyes," nor because glasses were worn by the aged hundreds of years before myopia was understood, or astigmatism or hyperopia was discovered. The increase of blindness with advancing years is shown in all the statistics of the relative

frequency of blindness. Once all diseases and calamities were ascribed to visitations of the gods. At that time it was logical to think of blindness as a necessary result of age. But now that we recognize the relation of "cause and effect, the chancellors of God," we must think of it as evidence of neglect of reasonable care. Harry Best, in his recent book, *Blindness and the Blind in the United States*, published this year, finds by his conservative estimate that 72 per cent of all cases of blindness are preventable, and that, with advancing knowledge and increasing care, practically all blindness may be prevented. We are engaged in a great field and an expanding field of human service.

Advances in knowledge and achievement are brought about by observing, correlating and using facts, methods and opportunities, previously thought unessential, or not important; and this is the path of progress in the prevention of blindness. We must have more accurate, explicit and reliable statistics of blindness as it now exists in our country. The statistics we now have compare well with those of other countries; but they are not sufficient to give a reliable basis for effective and economic general prevention of blindness. The first statistics of the kind in America were those secured for the State of New York in 1907, when Winifred and Edith Holt, in co-operation with Dr. Park Lewis, made effective the New York State Commission to Investigate the Condition of the Blind. A national investigation of the same nature is needed. There is an active Committee on Statistics of the Blind, operating as a joint project of the American Foundation for the Blind and the National Society for the Prevention of Blindness, which has assumed responsibility for getting improved statistics. This Committee, which represents the fields of ophthalmology, social statistics, work for the blind, and prevention of blindness, is working in close co-operation with the Section on Ophthalmology of the American Medical Association. For the present, the Census Bureau has discontinued special studies of facts about the blind. If and when the Census Bureau resumes its activity in this field, it is hoped that it may be carried on by those who have expert knowledge of the causes of blindness—not by enumerators appointed by political favor or because they have passed a general civil service examination.

The Ophthalmologist and the Prevention of Blindness

The prevention of blindness is something that extends beyond the boundaries of ophthalmology, and beyond the usual planning for public health. It must invade the daily life of the individual and secure an influence that will make living accord with all the personal health needs of the individual. In this connection, the close association of vision with psychology must be remembered; as well as the fact that human vision, evolved to utilize full sunlight, requires standards of illumination not yet commonly understood even by illuminating engineers. But within the scope of ophthalmic practice, and in the field of general medicine, there is plenty of opportunity for effective work in the prevention of blindness.

The routine work of the eye physician, or the ophthalmic surgeon, includes a great deal that is important and significant, as work in preventing blindness. Even when blindness had already occurred, it is not so much that the patient is blind now, as whether he must be blind for the remainder of his life, that demands attention. Cataract, which now heads the list of causes of blindness, is important, not for the disability it causes today, but for the disability for all the days and years that are to come. The need to prevent blindness for the remainder of life has called forth the efforts of specialists for thousands of years, and still stimulates effort to perfect the finest details of ophthalmic surgery. The treatment of glaucoma is still more an effort to prevent threatened hopeless blindness than to give relief from immediate pain. Laquer held his own glaucoma in check for five years by use of eserine; and then went to Horner for the operations that prevented blindness and gave him thirty years of useful professional life. In countries where trachoma prevails, many operations on the eyelids are done to prevent damage to the cornea and subsequent loss of vision. In cases of papilledema, or choked disc, decompressive trephining and removal of brain tumor may be performed to prevent blindness, even when they cannot greatly prolong life. In renal-vascular disease and essential hypertension, the threat of blindness is often the most important indication for active and persistent treatment of the disease. Suddenly failing eyesight may force a negligent diabetic to active measures for the prolongation of his life.

Nutritional and Chemical Research for Future Prevention

The danger of blindness, clouding the later years of life, demands for its prevention still wider planning and preventive activity on the part of the ophthalmologist and the general physician. The causes of cataract and glaucoma are still imperfectly understood. Enough, however, is known about them to warrant the belief that a broader, more accurate knowledge of the process of nutrition of the eye will make possible the prevention of blindness from these diseases, without waiting for emergencies that must be met by surgical operations. It is certain that in some cases the progress of senile cataract and of early attacks of glaucoma, has been checked by removal of eyestrain. This remedy must be carefully applied much more widely than has yet been done, before we can properly estimate its value for prevention of blindness. Its importance in myopia and conical cornea has been demonstrated.

Minute studies of the biochemistry of ocular nutrition, especially of the crystalline lens, the aqueous and vitreous, and the functions of the choroid and retinal pigment epithelium, will certainly help us toward the prevention of blindness. It is likely that both diet and general elimination can be so controlled as to lessen the dangers of blindness with advancing age. Exercise and healthy nutrition of the nervous system need especial attention with advancing years. The optic nerve and retina are parts of the nervous system liable to atrophy and degenerative changes toward the latter end of life. New investigations are needed to learn what must be done to preserve the health and functional activity of these essential parts of the visual apparatus. With age, the pupil gets smaller, admitting less light, and the retina becomes less efficient and prompt in its response to light. The amount of light habitually used is often not sufficient for young eyes, and needs to be decidedly increased as the eyes grow older.

Senile Visual Impairment Accumulative

The poor vision of old age often comes as an accumulation of the strains upon vision that have occurred in a lifetime. Many of them have been slight and most of them are forgotten; but accident, general disease, poor health, over-use and incomplete recovery from temporary disability, all add up toward the final

result. For a time the slow impairment does not prevent the regular use of the eyes, but as the eyes become less able to do the work required of them, the continued use becomes more and more harmful, and they may seem to give out suddenly. Blindness may come late, or not at all, but often it may be traced back to accident or disease, not effectively treated many years before. Whatever can be done to make more general the skilled and thorough treatment of slight lesions of the eye will help toward the prevention of blindness. The person most interested in the prevention of blindness, and most completely aware of any factor that may help to cause blindness, is the patient himself. The measures for preventing blindness must include close co-operation between the patient and his medical adviser, and appreciation of the possible dangers of what appear to be slight lesions.

School's Responsibility for Prevention of Blindness

No scheme of education is good that does not prepare the pupil to deal with the dangers and emergencies of life. Every child in school should understand what is good vision and how the eyes must be used to help it. The examination of the eyes of all school children, and what can be taught them in the making of such examinations, are extremely important steps in the prevention of blindness. Knowledge is the best protection against causeless alarm and ignorant recklessness. The "fuss made about slight eye defects in school" is the best provision to secure wise care of the eyes through the long years that go before age shows the culmination of slight injuries by accident and disease. Next to the patient's care of his eyes must come the alertness of the family doctor to the danger of neglect of what may seem to be slight injuries or symptoms.

This airplane view of the field in which we are working for the prevention of blindness gives an impression of its extent. But it would be incomplete without mention of the direction in which most important work is yet to be done. The greater part of life-long blindness is due to congenital blindness and ophthalmia neonatorum. The important causes of these are known. The attack of the latter has already been met, and its disastrous activity limited; but we are only recently beginning to understand

that congenital cataract is commonly due to parental syphilis. In a large part of the cases it is accompanied by a congenital defective development of the retina and other parts of the central nervous system. The prognosis for sight, after the removal of congenital cataracts, is necessarily less favorable than for senile or traumatic cataracts. The effort to prevent blindness from these causes brings us in close alliance with those who are working for the full control of social diseases. It places us in line, in co-operation and sympathy, with those who are striving to bring about higher standards in all branches of human life. The greatness of our undertaking should inspire us with courage and strong determination to go forward and finish the task in which we are engaged. But contemplation of the greatness of our objectives must not divert us from the work that lies immediately at hand—the gaining of better vision for the generation that we now have about us, waiting for help to make the best of their new lives—the school children of today.

In an age and civilization that provides standards of vision which the race as a whole has not yet attained, no one who works for the prevention of blindness can help realizing that those who are absolutely blind form only a small minority of the number who need visual help. It is a duty placed directly upon us, to make sure that those of the growing generation have the best visual ability and resource that we can confer upon them. We must do what we can to break the chain of inherited deficiencies of physique, mentality, ignorance, status, fortune and culture. In so far as we can do this we achieve a vital success. By removing inherited handicaps the “new deal” becomes the “square deal”; and we contribute a solid cornerstone to the building of the future. “As you would that others should do unto you, do ye also unto them.”

The Philosophy Underlying the Education of the Visually Handicapped*

Gladys Dunlop Matlock

THE aim of sight-saving class teaching is identical to every educational goal: the development of the individual to his own highest level of achievement. Vocational training and guidance are phases of special education needing greater study and more emphasis

IN attempting to discuss the philosophy underlying the training of partially sighted children, we must ever be mindful of the existing general philosophy of all educational training.

In these days when education is defined in terms of life itself, or as the "full harmonious development of the individual," one could scarcely deny special educational facilities for those suffering from serious visual difficulties. Without special attention, these children cannot succeed in regular classes. This is proved by the fact that in former times many partially sighted pupils were referred from public schools to institutions for blind. Realizing how inadequate and unfair this training was for those with partial vision, leaders in work for the blind were the first in this country to demand a new type of training for those children who did not belong in the world of the blind but who, because of poor eyesight, could not adjust to the ordinary classroom demands.

What Is a Sight-Saving Class Child?

As the work developed, each community set up standards or guides for admission. These varied considerably as to the type of child that should be enrolled in the classes and there is still some variation of opinion as to what is termed a "sight-saving class

* Presented at the International Council for Exceptional Children in Toronto, Canada, February 22-24, 1934.

child." In the minds of some individuals, a visually handicapped child is provided special attention only when he is on the border line between the sighted world and the world of the blind. In these instances, more or less the same techniques and procedures are now employed as are followed in Braille classes. However, it should be realized that there is also a large group of children who, to the average person, appear to get along very well in the regular grade. It is with difficulty that they are discovered but they really need sight-saving class advantages. A real distinction must be made between Braille and sight-saving class groups, and the principal distinction is that the latter children are seeing individuals and must be so taught, while the concepts for blind are presented through the tactile sense.

Guides for admission to sight-saving classes were suggested by doctors, supervisors, and teachers familiar with the work, meeting at Chicago with representatives of the National Society for the Prevention of Blindness, in the summer of 1928; they advise that in addition to all children having 20/70 or less vision in the better eye after correction, any child should be admitted to a sight-saving class who, in the opinion of the ophthalmologist, would profit by this type of training. These guides further suggest that each child must be considered as an individual. We know that there is a vast difference between what we may term as good vision and efficient vision, and that many children whose vision tests fairly well on the Snellen test chart may manifest serious difficulty upon close application to school work. This, then, suggests that in addition to the eye difficulty, much must be considered in making a sight-saving class recommendation. Attitudes at school and at home, the quality of academic work, mental rating, age, and the distance of the child's home from the class are all significant and should be considered and weighed by the trained supervisor or teacher in conjunction with the understanding oculist in making recommendations for placement.

Personality Adjustments in the Sight-Saving Class

Someone has said that "the chief aim of education is to realize the fullest satisfaction of human wants and that by attempting to satisfy the wants of all human beings, the desires of each of us will

be most fully satisfied." Assuming this to be true, surely the program for any handicapped child needs no further justification.

We know that without special educational facilities the partially sighted child fails in his normal school situation. Details might be given on the reduction of school failures, the conquering of behavior difficulties, the successful placement of individuals in jobs as a result of the sight-saving programs, but perhaps the following story will suffice.

Donald, a round-faced, brown-eyed youngster of nine years, was referred to the Psychological Clinic for study because of serious maladjustment. Poor school work, lack of concentration, tardiness, truancy, misbehavior at home and at school were the complaints. It did not take the examiners long to discover that Donald could not see. Glasses were secured and some help given the mother from the behavior clinic. Since visual acuity was brought to 20/40, he was never referred to the sight-saving department for placement. However, the school continued to complain of difficulty and the sight-saving class supervisor was called in consultation. At a glance, she recognized the boy as a sight-saving class case because of his very heavy lenses. A recommendation for placement in a class was completed, and a transfer effected without difficulty. In spite of almost an hour's ride on the street car, Donald was never tardy; he was never truant; and from the day he entered the sight-saving class, there was marked improvement in his school work. In fact, his mother stated to the teacher on one of her early home visits, "He is so happy I wish I might send the rest of the children down." The boy has been promoted regularly and frequently has been on the honor roll. When asked why he particularly liked the sight-saving program he said, "I have made many good friends and before all I could make was enemies." The security which he found in an understanding teacher and the satisfaction which developed from successful experiences, of course, explain his satisfactory adjustment.

Special Teaching Methods and Materials

Specific aims of these classes are: (1) to teach the boys and girls that they are in a very large measure responsible for the conservation of their own vision; (2) to provide pupils the opportunity of

making normal school progress; and (3) to guide them through their school years in order that each may select his vocation wisely with respect to eye condition.

In order to carry out this program, rooms with special equipment must be provided. Particular attention is directed to adequate lighting, both artificial and natural. Perhaps of most importance is the special teacher who understands diagnosis and prognosis for each case and is able to adapt the entire school program to the needs of the individual.

In any discussion of a sight-saving program, there usually arises the question of whether these pupils should be educated in day classes or in institutions. As stated previously, many of these children cannot be easily detected from others in the school system wearing glasses, and it is a foregone conclusion that parents would not submit to institutional training for such children. Furthermore, it is the conviction of those who work with the visually handicapped that if we institutionalize a partially sighted or even a blind child, we attempt to educate him in an environment quite unlike any situation he will meet upon finishing his school training. The day school plan, with its co-operative activities, provides social and academic competition with children with normal vision. Moreover, family ties and responsibilities should be kept alive whenever possible and particularly is this so for the handicapped individual. Another point which has a very large bearing on this question is cost. To this, educators must give careful attention. We have no figures on institutional training for sight-saving class children, but it is natural to assume that any institutional training which includes board and maintenance for all children would very largely increase the costs over the present day school programs.

Administration of Classes

State and local control is believed most satisfactory for the sight-saving group. Local authorities are acquainted with local situations and should be responsible for their share of the costs. However, since state laws compel education for all children, it is reasonable to expect the state to bear its share of expense in providing training for the visually handicapped, for, without subsidy, many of the smaller communities would be unable to furnish this

type of education. A program under the supervision of the state may also be an economy measure, for more careful planning may be exercised with regard to placement of classes. Thus, with the support of the state a bigger, broader program may be developed for all communities with greater economy to the taxpayers.

Within the school system the sight-saving program should be what we may term a co-ordinated program. Education cannot be concerned with academic procedure alone; the eye condition, the general health, and the welfare of the family are problems of the school.

Home and School Co-operation

A certain routine may and should be developed with the local health authorities to locate all children in need of special assistance. Once the child is in a sight-saving class, the school or the teacher should serve as a co-ordinator between the home, the school and the doctor. Friendly home contact should be maintained through occasional mothers' meetings and frequent home calls. Many mothers do not know the importance diet plays in the cure of certain eye difficulties. Others become discouraged when required to return Johnny or Mary to the clinic week after week, and sometimes month after month. The busy doctor often takes too much for granted and fails to dwell on these matters so important to the care of his patient. Through her appreciation of the whole picture, her friendly home calls, and what she has been able to accomplish academically with the child who often in the estimation of his parents "just could not learn," it is the teacher and she alone who has persuasive powers to convince parents of the necessity of routine care.

The lunch program, where sight-saving class children receive warm nutritious food to aid in building a good physical body, with its resultant improvement in eye conditions, is another function which should also be assumed.

Special Means for the Common Goal

When we come to the consideration of courses of study, we must realize that there can be no reason for deviation from the curriculum set up for normal children except in certain studies which

require a large degree of close eye work. As Mrs. Hathaway so aptly stated in a recent article: "It is evident that curriculum problems for sight-saving classes are concerned with adjustment rather than with the building of a new curriculum. The teacher's aim is to so adjust the regular school program that her pupils will get the greatest benefit, with the least possible eyestrain."

To illustrate: If we are to be concerned about "eyes first" and "education second," the sight-saving class child must be deprived of reading for pleasure. Reading for the sight-saving class child should be a tool subject, for to him sight is much more precious than any pleasure that could be derived from reading the best of literature. This deprivation seems very great and almost unfair, but viewed in the light of the aims of any sight-saving program, it is only just and sane. The real sight-saving class teacher realizes the necessity of having the child reach this point of view himself. She therefore discourages reading for pleasure, but directs attention to the worth while radio programs of various descriptions, and to the free lectures to which the pupil can listen and benefit greatly. Doubtless, all of us have been slaves to books, and perhaps for all children more emphasis could be placed on expression in its varied forms rather than that which comes solely through the written page. There would be compensations from a visual standpoint, not to mention the growth in individual creative ability.

Creative Expression

Sight-saving classes have carried on what is known as handwork for many years. Because emphasis has always been placed on the use of crude material and since it was designed to provide satisfactory interest for the child during his leisure time and relief from close eye work during school periods, it may well be considered under the caption "Creative Activity."

In the columns of our press almost a year ago, there appeared the following statements: "It may be the machine age for the adult, but not for the child of today.

"Handwork gives the child more self-confidence than any amount of mental or machine activity could inspire. There is assurance for the child in seeing what he can fashion with his own hands. It encourages creative powers and often brings out latent talent."

Who needs encouragement more than the sight-saving class child who, perhaps new in the school environment, is just finding his real self? And certainly we need to use every possible means to determine whatever aptitudes these handicapped pupils may have.

A young boy, suffering from tuberculosis, said just the other day, when given material for construction of bird houses, "I don't know how, but I want to learn. Busy hands make busy minds, and a busy mind makes you forget your own troubles." With all physically handicapped individuals, good mental hygiene is necessary. It would seem that the creative program helps to solve this problem and is another means of emphasizing ability rather than the handicap.

The creative program may follow many lines of activity. One intermediate school sight-saving group practically landscaped one side of the building, having gathered seeds, plants and some ideas from the original school garden. Here, the children learned how to prepare the soil, how to handle plants and seeds, and best of all, became interested in a hobby which will provide splendid activity for leisure time.

Development of Vocational Program

It is often said that "a democracy is no stronger than its weakest link." Let us hope that this is not true of the sight-saving class program, for we recognize full well the weaknesses of the vocational side of the program. If this be true, let us set about to strengthen this weak link in order that our ambitions for these children be fully realized. There are two reasons why it has been difficult, even in normal times, to place sight-saving class children on satisfactory jobs: (1) the jobs that the partially sighted can perform in industry depend so much on the individual eye condition: (2) those who know the eye conditions do not know the types of work available and the amount and kind of eye work each entails. Aid could doubtless be secured if there were some studies made by placement agencies in collaboration with ophthalmologists or organizations for prevention of blindness who thoroughly appreciate eye conditions.

Another thing which sight-saving classes may well do is to use to their advantage the vocational schools now set up in our public

school systems. Only two vocational sight-saving classes exist—one for boys in Cleveland, Ohio, and one for girls in Detroit.

This is to be decried when passage of the Smith-Hughes Act by Federal government and other laws by various States accepting the terms of the Act indicate that vocational education has a place in every school system.

Vocational Training for Sight-Saving Class Pupils

It is believed that a sight-saving class group is representative of the normal group and, therefore, we find children who, beyond a certain grade, profit best by vocational, rather than academic training. It was for a group of this kind, six in number, that Detroit's vocational class was established in September, 1927. Changes have been made from time to time. Courses have been adapted to meet our needs and it has become necessary that the sight-saving class teacher teach one class in the regular school in order to carry on the program. At the present time, the enrollment numbers fourteen, and as we analyze our records, it is with satisfaction that we note the following:

Thirty-one girls have been enrolled at the school. Of this number, two left town, three returned to regular grade, and one left without completing any of the courses. There remained twenty-five who finished the training and for whom we should account. Eleven have been assigned to housework and child care, two are working in stores owned by their fathers. Four have been placed in food shops. Working permits were issued for two others but no actual information on placement is available. Three girls married and are in homes of their own. If we note these figures carefully, we shall see that all but three girls were given satisfactory jobs upon finishing school.

Less than a month ago one of our girls was placed on training in the bakery department in one of our finest apartment hotels. When the placement officer called on her, the girl told with great pride of making twenty lemon chiffon pies that day in addition to quantities of cookies, hermits, and other pastries. She was giving satisfaction on the job and spoke with real assurance when she said, "I can do anything here, there is everything with which to work," indicating that she had really learned how and all she needed was

the opportunity to show what she could do.

These are the results of efforts during a depression period when jobs have been few and normal individuals have been in the bread lines. True, not all have been placed, but the fact remains that they have learned something of working attitudes, the responsibilities which go with a job, not to mention many personal helps and suggestions for home responsibilities. Here, they have worked where they have experienced a measure of success and are facing the world with a sense of accomplishment rather than defeat. Such would have been the experience of the majority if a purely academic program had been followed.

Education for Useful Citizenship

Referring to a previous statement, if "the aim of education is to realize the fullest satisfaction of human wants," we cannot fail to emphasize the type of training which enables the boy or the girl to satisfy his greatest want—that of making a living.

This may sound like mere propaganda during this crisis in education, but many times this simply means planning more wisely and possibly a re-allocation of present funds.

Let us be sure that our program is a complete one, that we are really "teaching the business of living." As Dr. Rollo Reynolds of the Horace Mann School, New York, said in one of his lectures just the other day, "I want my child trained not only to know but to think and to feel, for as I feel so am I." Truly the philosophy underlying the education of the handicapped child should be just this, and out of this training should come worthy citizenship.

The Control of School Myopia

N. Bishop Harman, M.A., M.B. Cantab., F.R.C.S. Eng.

ALTHOUGH schools in England differ in many respects from those in America, this contribution from one of England's eminent ophthalmologists has many points of application in America. In order to give a panoramic view of the subject, the editors hope to publish a series of similar papers from other parts of the world

THE control of school myopia is a proposition that, in my experience, is easy in conception but difficult in performance. It is easy to conceive and to make arrangements in the schools so that the risks of school myopia will be reduced to a minimum. It is very difficult to control the progress of even low degrees of myopia in some school children.

The term "school myopia" has been attacked by some as begging the question. The objectors maintain that there is no proof that the school is the responsible or the dominant factor in the production of the myopia. They point to the occurrence of myopia in illiterates. Admittedly such cases do occur, but illiteracy is no proof of absence of close eye work. In any case, the numbers of these cases bear no comparison with the numbers of myopes to be found among the studious and scholarly. The fact that there are few, if any, cases of myopia to be found before the fifth year of age, the common date of the beginning of school life, and that thereafter there is a steady increase in the number of cases through school years, would seem more than a mere coincidence. Several causes—heredity, congenital defect, illness, bad social conditions, and too much close eye work—may contribute to produce myopia. School has a direct bearing upon all these conditions save the first, and even in that an indirect influence may be traced.

Some Predisposing Factors in Myopia

Our education and the choice of our life work is largely influenced by family tradition; the studious for the most part produce the studious and the outdoor worker the outdoor worker. Congenital defect as shown in astigmatism is, on the evidence I have obtained, a considerable factor in the production of myopia. In two investigations made to ascertain the proportion of astigmatic children among myopes the percentage found was abnormally high, in one 46 per cent, in the other 53 per cent. There was evidence that with the increase of school age the numbers of children with hypermetropic astigmatism diminished and those with myopia increased. Astigmatism may therefore be the foster-mother of myopia in susceptible children. Modern school conditions, with systematic vision testing, school clinics, the prescription of spectacles and the supervision of the work of dubious children, together form the means in our hands of controlling this cause of school myopia.

Illness is notoriously a common starting point of myopia or of the increase of existing myopia. Since myopia is due essentially to an unusual softness or a disease condition of the sclera, general ill-health may well be debited with a malign influence. We cannot prove the direct connection, save in some cases of interstitial keratitis, but cases of children who are known to have been free from myopia and in whom the myopia dated from an illness are too common to be negligible. In some it would seem that the myopia is associated with the skeletal overgrowth that sometimes follows long illness, in others it may be similar to the effect of prolonged febrile conditions on the heart which cause weakening of the mitral ring and so induce valvular insufficiency. In most I am inclined to think it is due to or aggravated by excessive indulgence in reading during convalescence. Soft-hearted parents indulge their children with enthralling story books, just when their eyes are least able to stand up under the strain. School is indirectly responsible for this, for there children are taught to read and to enjoy books, but not proper precautions in their use.

Influence of Living Conditions

For our purpose, I would define bad social conditions as the subjection of the children to conditions that are tolerable to adults

but injurious to growing children. During school medical inspection of the children of neighboring but dissimilar districts I was much impressed with the potency of this influence. One district was a notorious London slum, the other a model estate. The slum children who ran wild in the streets, when not in school or bed, were healthier on many points than the children of the estate, whose parents thought it was not respectable to let them play in the streets! It is this that explains the greater incidence of myopia in girls than in boys, and possibly also in some alien London children as compared with the children of native stock. Both are too house-bound. Girls are expected to help in the housework, the boys escape. Jewish children have not outlived the tradition of the ghetto and, in addition, the boys have evening classes in Hebrew which must be a strain. Nowadays we are well aware of the untoward effects of the deprivation of light and air; the house-bound suffer this loss as well as the strain of work at too early an age.

Effect of School Program

Finally, there is the effect of too much close eye work. The allegation that excessive eye work has a determining effect on the production or increase of myopia has been contested. Personally, I have no doubt of the injurious effects of prolonged, close eye work on susceptible children, and believe that this is a cause of and an aggravation to myopia. Also, I am convinced by such evidence as I have that the control of eye work is beneficial to myopes. There is ample evidence for this contention in our observation of the pupils in the myope or sight-saving classes. The evidence that an individual can collect is necessarily limited. But there is mass evidence from Sweden obtained through systematic school medical inspection before and after certain drastic changes in school methods. This evidence is dramatic and convincing beyond dispute. In that country improvement in hygiene and in school lighting, the abolition of the old Gothic type in favor of Roman, and the increase in outdoor sports have been followed by a reduction in the incidence of myopia which is remarkable. That the regulation of close work was a material factor in that reduction is evident, for it is reported:

"There is a 20 per cent greater decrease on the modern as compared with the classical side. Classical studies require closer attention to books, and entail the more frequent use of dictionaries, which are generally printed in small type. Greek especially presents a form of lettering entirely new to a pupil, and requires very close concentration."

The improvement in educational methods in the past 30 years has been wonderful. When first I engaged in school medical inspection, unsuitable school buildings were common; windows were too small for the size of the classroom, they were too often overshadowed by other buildings; children sat back to the light or even facing it; artificial lighting by ill-placed flickering gas jets was a travesty of illumination; slates were still in use; the print of school books had not been criticized; and there was no test of the fitness of the child for the work to be done. Now all that is changed. School hygiene has been placed upon a sound and practical basis; it has had a profound influence upon the school curriculum. Educators who were at first inclined to resent the invasion of the doctors into their domain now welcome him whole-heartedly. Could there be better testimony to his utility? Through improved standards of living and the combined efforts of the educators and the doctors there has come an incontestable improvement in the well-being of the children.

Myopia a Difficult Individual Problem

So far as control of school myopia can be effected through mass methods of educational betterment there is evidence that we are on the road to success. That is the easy part of our task. The second part of our work, the control of school myopia in individual children, is still a serious and as yet unsolved problem. We still get cases of myopia in children where there is a progressive increase of the short sight, notwithstanding meticulous care on the part of parents, teachers and doctors. Some of these children show no immediate hereditary tendency to myopia; physically they may be robust, and they lack no care. How are we to regard this apparent failure, and is there any remedy for it? We may perhaps seek comfort in the reflection that if there had not been all this care the progress of the myopia might have been greater, but that is

scarcely a justifiable way of escape. I am inclined to the view that there are some eyes in which there is a congenital inadequacy, just as there is in fibrous tissues elsewhere which leads to bent backs and flat feet. In such cases it might be well for the child to receive his education in the methods of the sight-saving or myope class. In yet other cases, where conditions and means allow, it is well to stop all schooling and reading (except *viva voce* teaching) for at least a year; let the child run wild, preferably at the seaside, and give iron in small doses over the whole period. Such a regimen may be a counsel of perfection, and its practicability needs to be weighed against the educational disadvantage involved, but where these arrangements could be carried out there has been evidence of a check to the progress of the myopia.

In conclusion I am prepared to maintain that the effectiveness of our methods for the control of school myopia is not to be judged by our failures but by our successes, and there is ample evidence that our successes predominate.

Eye Health for Atypical Children*

Lewis H. Carris

DESPITE the remarkable achievements of Laura Bridgman, Helen Keller and a few others, educators realize the special responsibility for conserving the vision of children who are deaf, or hard-of-hearing, or crippled, or mentally defective

PRIMITIVE man acquired his education by means of his five senses: the senses of touch, taste, smell, hearing and sight. Every one of his senses was important to him, for education in that primitive state was individualized and each man learned for himself, through trial and exploration, all that he needed to know about his environment. This method of learning about his environment is still seen in the learning pattern of the small baby. Looking at a new object does not satisfy the small child; he must feel its texture and temperature; he hits it against the floor or bed to hear its sound; he lifts it to his face to explore its distinctive taste and odor, before he willingly relinquishes it as a lesson learned.

Experience and social custom soon dispense with this sensory exploration of the environment, and perception comes to depend more and more upon vision, coupled with experience. Formal education, which is a projection of the instinct to explore the environment, has become, with the sophistication of life, more and more dependent upon the sense of sight as the chief tool of learning. It is estimated that normally about eighty per cent of impressions come to us through the eyes. This one fact is the greatest of all arguments for the conservation of eye health for every child whom the State undertakes to educate. For children who so differ from the so-called average that they must have a specialized type of education, the importance of eye health cannot be sufficiently stressed.

* Presented at the Conference of the New York State Teachers Association in Buffalo, New York, November 2, 1934.

Double-Duty Eyes

If the average child acquires eighty per cent of his education through his eyes, the handicapped child—the deaf or hard-of-hearing; the crippled; the mentally defective; the physically handicapped—is even more dependent upon the sense of sight for his education. The deaf child must see clearly if he is to benefit by the attempt of the State to educate him. He uses his eyes not only for reading and observation, but for hearing as well. His eyes, substituting for his ears, must learn to interpret the delicate and rapid movements of the lip and facial muscles so that he may follow speech and reproduce it. Visible movement is his sound, and his eyes must be forever on guard to follow it. Dr. Charles Scott Berry says: "Vision in the deaf and the hard-of-hearing does in a large measure the work of hearing. It is an important factor in relation to deafness and it is therefore especially important that a careful visual examination be made of all deaf and hard-of-hearing children as soon as they are discovered. Conservation of vision should go hand in hand with conservation of hearing. Without adequate vision, deaf and hard-of-hearing children are seriously handicapped in learning speech and lip reading."

The comparative immobility of the crippled child makes it necessary for him to use his eyes as a substitute for agile legs. Other children are able to run about their world; the eyes of the crippled child must help him bring the world to him. Reading and handwork, both involving close use of the eyes, must take the place in the life of the crippled child of the games, the exploring and climbing, the wider physical range of the normal child. Because his handicap prevents him from sharing many social and educational experiences, the crippled child must be encouraged to a wider field of reading, says the New York State *Bulletin* on the Organization of Special Classes for Crippled Children. In his leisure time activities, in his school work, and in his future vocation, the child who is crippled will need dependable eyesight. Conservation of that eyesight upon which extra burdens are thrown, is a crutch which will help to carry him over the gaps in his life caused by his handicap.

The success of the education of the mentally defective child

depends upon clarity and simplicity of ideas. If the eyes that carry impressions to the retarded brain are not functioning accurately, the image loses its clarity, and the efforts of the educator are to no avail. Sharp eyes, the sharp tools of the brain, are needed to make clear impressions on the dull and unretentive mind. The importance of detecting and correcting defective vision among mentally handicapped children is markedly illustrated in the report, some years ago, of Dr. M. B. Beals, supervising oculist of the Bureau of Child Hygiene in the Department of Health in New York City: "Out of 132 mentally defective children whom I refracted and for whom glasses were procured, 24 were found to be normal after relieving their eyestrain, and more than 65 per cent of them showed decided improvement."

At the other extreme of mental endowment are the gifted children whose minds develop quickly; who absorb at a glance; whose mental maturity leads them ahead so much more rapidly. If the sight is not accurate, the quick mind may be held back by learning and having to unlearn a mistake; while there are no conclusive statistics on the subject, figures have shown that gifted children are more than usually likely to be myopic, or shortsighted. Short sight is not an educational handicap, for the shortsighted eye easily adjusts itself to close eye work without special strain or fatigue. But the shortsighted child is frequently handicapped socially. In a vicious circle, he retires more and more from games and strenuous group activities, because he sees poorly at a distance, to absorb himself more and more in studies and reading, a field in which he excels. Every effort should be made to keep healthy the eyes of the gifted child so that he may realize to the fullest his special endowment socially as well as academically.

Inventory of Visual Powers

Ideally, every child should have a complete physical examination, including a vision test, before he enters school. It is even more urgent for the physically handicapped child to enter his school life with no defect uncorrected. Actually, the physical examination is often delayed, and the vision test may not be given until after school life is well started. Confronted with children with unmistakable handicaps, such as deafness, crippling, blind-

ness, mental deficiency, the examiner is so engrossed in the major disability that minor defects may be overlooked. Moreover, there exists a superstition that among the handicapped there is a balancing compensation in the other senses. Unfortunately, nothing is more fallacious. Too frequently the cause of the primary handicap is contributory to a lesser defect. Meningitis, often the cause of crippling, may leave the eyes impaired. Scarlet fever may weaken the eyes at the same time that it deafens. Birth injuries, the cause frequently of limited mental capacity, may also limit vision. Among the children physically below par—the cardiac, the tuberculous, the undernourished—associated eye defects and diseases are noted. Statistics collected over a period of years show that from ten to twenty per cent of school children have visual defects; the percentage is probably higher among those with palpable handicaps.

Physical examinations under the direction of a physician should be routine procedure in a class whose pupils deviate from the normal. The physical examination should include a test of the vision and an examination of the eyes. When this ideal test of sight and eye health is not possible, the classroom teacher must feel more completely her responsibility for detecting and routing for diagnosis and correction the child with defective vision.

Some years ago a technique for testing the vision of young children was developed by the National Society for the Prevention of Blindness. Instead of the usual Snellen letter chart, the letter "E" is used in various positions; children as young as three years old have played this game test with accurate results, and its feature of demanding a single response to a simple question is equally helpful with children of limited intelligence, with children who are mute, and with those whose early education has been so neglected that they do not know their letters. A pamphlet has been prepared outlining the method of giving the test and scoring it. Children who do not meet the qualifications of this test are obvious candidates for ophthalmological examination.

Teacher's Responsibility in Eye Health

The responsibility of watching for signs of eyestrain and visual defect lies heavily upon the teacher of special classes. Not only

will she make, when necessary, the vision tests, but she will watch for certain signs and symptoms that lead her to suspect eye trouble, and route for ophthalmological examination any children showing them. Inflammation of the eyes, frequent styes, spasms of the lids and twitching of the facial muscles may be symptoms of eye disorder. Marked inability to learn to read, writing with little regard for lines and spaces, lack of concentration, and emotional instability may be the results of eye defect. Before condemning a child as stupid, inattentive, or troublesome, vision defect should be definitely ruled out.

Every classroom where children are studying should be arranged to prevent eyestrain and to minimize eye fatigue. The teacher of the special class must be aware of and put into practice those standards of eye hygiene which will prevent undue eyestrain. Good natural lighting adequately supplemented by artificial illumination for dark days, is a prerequisite for the maintenance of eye health. Standards which have been evolved by lighting engineers, educators and eye specialists require, at least, a range of from eight to twelve foot-candles of light in the classroom.

So that she may know, and not roughly estimate, how much light is falling on a particular place, the teacher will find a light-measuring device of great help. A small light meter, using the photoelectric cell to measure light, has recently been perfected; it is small enough to carry easily in the hand; its readings are uncomplicated; and it is comparatively inexpensive. It is marked "for ordinary eye work," for "close eye work," and may be used by the children themselves to check lighting arrangements.

Making the Most of Environment

Frequently schoolrooms are designed to provide good natural lighting, but the facilities are not fully utilized by the teacher in charge. The good effects of adequate light are completely canceled if the light is translated into glare. If the deaf child is trying to catch the small movements of the lips, no amount of light will help him to catch every word if the light is reflected into his eyes from a shiny desk top. Woodwork and walls should be finished in a dull paint to prevent excessive glare. Books printed on shiny paper reflect light in the same way and prevent seeing. In special

classes where it is possible to have an informal and flexible seating arrangement, special care must be taken that no child faces the light source directly, and that no child sits in his own shadow. A particularly helpful outline on classroom lighting is *Standards of School Lighting*, published by the Illuminating Engineering Society. Another statement on eye hygiene in the schoolroom is *A Program of Eye Health in a School System*, published by the National Society for the Prevention of Blindness.

Integration of Eye Health Education

Freedom from eyestrain is closely linked with the practice of periods of eye rest. In classes for children who are physically below par, the rest period or nap period is well appreciated. When there is no special period for relaxation, the teacher can plan the day's program so that periods of close eye work alternate with periods of comparative eye rest. Learning to relax the whole body and to relax the eyes is a valuable lesson to the child who, because of a physical or mental handicap, is more than usually highly geared.

Not only will the teacher of the handicapped child try to provide him with school surroundings which make every contribution to eye health, but she will provide him, too, with the information, and develop in him habits that will contribute to eye health at home and in his after-school life. Good lighting and a consciousness of its lack; well printed books; eye rest periods; all the many factors which go to make up a program of eye health in the classroom are of no avail if they do not become part of the child's own life. Through example, through increasing responsibility for his own eye health, and through study of the physiology of sight, the child will develop those desirable habits which will help him through life to maintain his so necessary eye health.

The Doubly Handicapped Child

It may be that among the children in her special class, the teacher will find one or more children whose vision is so poor that treatment and correction by glasses are impossible. In the average group, it has been found that one child in 500 has vision so poor that he needs special educational equipment and special techniques.

Among children already handicapped the percentage may be higher. Such systemic diseases as meningitis, congenital syphilis, birth injury, once they attack the eye, rob it forever of some degree of sight. For children who are otherwise normal, the sight-saving class has been established. When the child has another handicap, such as deafness, mental deficiency, or is crippled, these special sight-saving class methods of teaching may be adjusted to the individual child in the special class. Large-type books used by the sight-saving class children may be obtained for the child with seriously defective vision in the special class. Sight-saving class children do much of their written work on typewriters with giant type; material that is not available to them in large type is either copied in large type on the typewriter or read aloud to them. In communities where there is a sight-saving class, the teacher of a special class having a child needing this adjusted material will be able to make a co-operative arrangement with the teacher of the sight-saving class. If there is no sight-saving class near by, the Bureau of Special Education of the State Department of Education will assist the teacher to make the needed arrangements for the doubly handicapped child.

Each one of the children, called for classification purposes atypical, has within himself the possibilities of becoming a useful, integrated citizen. In caring for the crippled body, we must beware of crippling the soul. Let us build not upon the handicap but upon the remaining strength. We have before us daily the example of a man whose handicap would have excused him from making any personal mark in life; yet it is to that man that millions in this country look for salvation and deliverance from the tangled state of our affairs. Each of the children whom you teach has the right to look forward to a life of accomplishment at his own highest level, to a life of satisfaction with that accomplishment. Every effort that you bend to help in this accomplishment is aided through building and maintaining eye health.

Your Eyes and You

Charles A. Bahn, M.D.

THE sensitivity of the eye to disturbances in remote parts of the body is reflected in its reaction to focal infection, to poor personal hygiene, and to emotional factors

DO YOU know that approximately six of every ten persons who consult an oculist have some condition elsewhere in the body which may affect the recovery of their eye symptoms? This condition is often a slight dysfunction which is associated with physical and mental living habits of the present and past. Frequently, oversensitiveness and irritability of the eye are but a part of the same oversensitiveness and irritability all over the body, somewhat more marked in the visual mechanism.

Emotional Strain and the Eyes

The poor investment of health and happiness, which is sometimes completely beyond our control, plays a more important part in the premature aging and dysfunction of nearly all parts of the body, including the eyes, than is generally believed. Many of the greatest medical achievements of the future will evolve from this basic idea.

Not long ago, a patient, let us call her Mrs. Jones, began suffering from headaches after reading a few moments. She needed only proper glasses which I prescribed and which she wore constantly, obtaining prompt and complete relief. After a month she began wearing the glasses only for close use, with continued complete relief. Several months later, however, her husband lost his position, and within two weeks her headaches promptly returned. After a re-examination showed that the glasses were practically correct, she began wearing them again constantly with partial relief. In several weeks, her husband secured another position,

and within a few days the headaches ceased completely. They were obviously due partly to eyestrain and partly to a general nervous irritability associated with fear, loss of appetite, etc., and other factors surrounding her husband's economic status.

Fortunately for both physicians and patients, our repair plants often effect marvelous temporary and permanent cures after only partial eradication of underlying causes and sometimes without that; but there is a limit even to nature's ability at health restoration.

Mr. Green's left eye suddenly became painful and the vision blurred. He had an iritis, a poisoning of the eye from elsewhere in the body. He had not one, but four, possible sources of poisoning: several dead teeth with abscessed roots; chronically infected tonsils; a diseased appendix; and lowered vitality from too much tobacco, alcohol and caffeine, insufficient outdoor exercise, a badly balanced diet, etc. The teeth were unquestionably the worst sources of infection, and as they could not be safely saved, I advised their removal. In addition, I recommended common sense in his living habits and, later, removal of tonsils and appendix if necessary. The eye, as frequently occurs, was worse for a few days after the removal of the infected teeth, after which it promptly got well and has remained so for the past year. He insists on retaining his appendix and tonsils and is even unwilling to minimize infection from these sources. Unless normalized or removed, they will cause another chapter to this story at some future time when his vitality is again lowered.

Eyestrain and Poor Health

Medical, surgical, optical, and hygienic treatment of the eyes frequently gives complete relief to the eye and other symptoms, even when extra-ocular factors are causative.

Miss Graham, a stenographer, was fitted with corrective glasses some months ago for the relief of headaches which had become so severe that her nutrition and rest had been interfered with, causing a loss in weight of fifteen pounds in a few months. After her excessive eye fatigue was relieved, her headaches ceased, and soon she regained her weight by living a more normal life. Of course the glasses did not directly restore her lost weight; but they did give her repair mechanism an opportunity to work more successfully by materially reducing her eye fatigue.

Remote Causes of Eye Difficulties

In health it is frequently difficult to associate cause and effect because of the long interval of time, or because of unusual results which a cause may produce.

On awaking one morning about a month ago, Mr. Baker noticed that something was wrong with his eyes. On closer observation, he found that he saw double and that one eyelid drooped. In addition, the pupil of the drooping eye was somewhat larger. Neither pupil contracted in the light. He was apparently in the best of health and denied any past sickness which could have been causative. His family physician was requested to include a blood Wassermann test, and if necessary a spinal Wassermann test, in the examination. Besides the eye symptoms, nothing abnormal was found except a strongly positive Wassermann. His eyes have already markedly improved under appropriate syphilitic treatment. The double vision was really a blessing in disguise for, had it not occurred, his nervous system would have been so damaged by the disease before it was discovered that treatment could have been of little practical benefit. He finally recalled a very slight venereal sore some twenty years ago which lasted but a few days.

Some years ago Mrs. Austin had difficulty in reading and her glasses no longer seemed just right. Her pupils were a bit larger than usual and did not contract on light exposure. Her glasses were correct, and her symptoms were apparently due to medicine in some form. She promptly denied having taken medicine of any sort within six months. Her family physician found no evidence of disease in any part of the body. After repeated questioning, she finally thought of the suppositories she was using for piles. Ten days after other suppositories without belladonna were substituted, the eyes returned to normal and have remained so. Had even a slight glaucoma existed, this story would probably have had a different ending—blindness.

My residence phone rang early one Sunday morning, about five years ago, when the dismal voice of an old friend announced that he had suddenly gone blind in one eye. This he attributed to the baneful effect of bad whisky consumed the night before. Instead of wood alcohol poisoning, he only had a cinder imbedded in the eye, the removal of which promptly restored his sight and happiness.

General Diseases and the Eye

Disease in almost every organ of the body may affect the eyes. Approximately fifty conditions involving every part of the visual

system are caused by, or associated with, disease in some other part of the body. These may vary from the mildest and most transient symptoms, such as a slightly excessive fatigue of the eyes after close use to total blindness which sometimes occurs in locomotor ataxia. The ocular involvement may be rapid and violent, as in acute glaucoma, or may be so slow and gradual that one does not realize its existence until blindness or even death is near.

Some years ago, Mrs. Dardenne, a charming lady of about thirty-five, who had been very active in social and philanthropic life in a large city, had for several months been having occasional eye discomfort when reading, to which she gave little thought. She did not need glasses. The retinas of her eyes contained numerous hemorrhages, and the optic nerve entrance to the eyes had been swollen for some time. She died of uremia, a complication of long-standing Bright's disease, in about three months. Had she given more thought to herself and less to the rest of the world, her life would probably have been prolonged many years. The price of leadership is often high!

Focal Infection and the Eyes

The eyes may be involved by the direct extension of an adjoining inflamed tissue such as the sinuses, or they may be attacked from some distant part without involving the tissues directly surrounding the eyes.

Little Jane Marlow had a cold in the head for several months when suddenly her left eye became painful and so swollen that one could hardly have recognized her, not only because of the swelling, but because of the loss in weight associated with her high fever and loss of appetite. The infection had extended from her nose into the ethmoid sinus and broken down its paper-like separation from the orbit containing the eye. Drainage of the pus both through the skin of the lids and from the nose, quickly reduced the source of poisoning, and nature did the rest! Generally speaking, nature is kind to the young, cruel to the old. When a head cold lasts longer than normal, better find out what is going on.

When some parts of the eye are badly poisoned, recovery becomes more difficult and even impossible, though the cause is removed. No organ of the body contains in so small a space so many different kinds of highly specialized tissue as does the eye,

which is probably responsible for its sensitiveness to poisons and its peculiarities in recovering from disease or injury.

Old Mr. Brownlow was sent to me several years ago by his dentist because of slightly failing sight in both eyes. He was nearly eighty years of age and had a slowly developing uveitis, a poisoning of the eye, from elsewhere in the body. He had enough diseased teeth to poison a dozen eyes, which however were giving him no trouble and which had not affected his health for these many years. His eye disease was so slowly progressive that his sight, from a practical standpoint, would not have been affected for at least several years. His physician said he would probably not have more than two or three years in this world. The extraction of his teeth would have materially shortened his few years through shock and malnutrition, so the dentist and I both agreed that the human and scientific thing to do was to let Mr. Brownlow keep his few years, his teeth, and his eyesight for the probable length of his life.

How Focal Infection Works

This jumping of disease from one place to another in the body is in one form called focal infection; it is due either to a chemical poisoning in the eye from elsewhere in the body, or to the deposit of germs in the eye from some other part through the blood or lymph stream.

The journey of these germs is interesting. Let us suppose that bacteria—frequently streptococci—are buried at the root of a dead tooth. Further, let us suppose that mechanically, as in chewing, or chemically, by dissolving the delicate barrier which has previously separated the rest of the body from these germs, they get into the lymph or clear fluid from which every cell in the body gets its nourishment. Our germs are carried in the very sluggish lymph stream, probably multiplying all the time, unless killed by the white blood cells. In the nearest lymph gland, which is the second fortress of defense, they are usually killed and the story ends. Sometimes these germs storm the fort and pass to the nearest blood stream, and then to the heart. Here they not infrequently find a resting place and, continuing to multiply, produce some types of heart disease. Passing through the heart, they enter the arterial circulation and are deposited in the eye or elsewhere, causing secondary foci of disease. Their tortuous journey

to make us sick is one of our greatest safeguards to health. Just why the eye is so much more frequently involved than its relative size suggests, is not known. Its highly specialized tissues probably increase the liability to structural variations, which sensitize the eye not only to chemical poisons but to bacterial invasions. The infrequent involvement of both eyes in some forms of bodily infections is probably likewise explained.

Various Types of Focal Infection

We have always believed that a dog cannot be changed into a cat, nor a lamb into a lion, but Rosenow and other investigators have shown that some kinds of germs may be changed into other kinds and, still more interesting, that the eye is especially liable to be attacked by some germs injected in the blood stream. Although these ideas have not been generally accepted, they show that many of our unproven conceptions about disease will have to be revised. Friendly germs which are scavengers and live only on dead cells may under some conditions become deadly parasites which attack or poison living cells, and quickly overwhelm our defensive mechanism.

There is an interesting and varied group of ocular inflammations called herpetic. They apparently can be produced by numerous causes, one of which is focal infections. The sensory nerves of the eye which contain nutritional or trophic fibers are primarily attacked by the germ, virus or poison, and as a result the affected part is insensitive to touch and heals very slowly.

Some parts of the body are especially fertile fields for focal infections. The germs which grow there seem to be especially virulent in causing disease elsewhere in the body, including the eye. The teeth, paranasal sinuses, faucial and pharyngeal tonsils, appendix, gall bladder, male and female generative organs, and probably the intestinal tract, are the principal storehouses for these types of infections. They may exist for years, apparently doing no harm, and suddenly and without apparent cause, attack a distant part of the body. It is quite probable however that lowered resistance, associated with physical and mental living habits, or perhaps a very slight injury, sets off the explosion by breaking down nature's barriers to infection.

Focal infections of the eye very frequently follow closely a death in the family, a severe emotional shock, or a very disturbing mental factor which has severely interfered with the well-being of the body. This association, which can be explained on sound medical reasoning, is probably more than mere coincidence. Of course, these factors are not the sole cause, but they make germs or poisons active which might have remained inactive a long time, perhaps indefinitely. Times of great stress and strain are dangerous times in health. Physical and mental living habits should especially be designed to reduce to a minimum the tax on body, mind and soul.

Eye Complications of Focal Infections as Old as History

From the publicity and interest shown in this subject during the past several years, it is not difficult to get the impression that the close relationship between the diseases of the eye and other parts of the body is just another new fad which will soon be forgotten. In reality, our fundamental ideas on this subject are the accumulation of approximately 4,500 years of observation. The first known reference to the association between diseased eyes and teeth, for example, dates back to the table of Hammurabi some 2500 B.C. The great Greek physician, Hippocrates, understood that disease in one part of the body might produce disease elsewhere. About 1800, Benjamin Rush, founder of the Rush Medical College, now a part of the University of Chicago, urged the removal of infected teeth to relieve disease elsewhere in the body. Since the development of the X-ray and of bacteriologic technique, about 1885, our knowledge on this subject has been greatly clarified, and the details of bacterial infection and the diseases produced are now reasonably well understood.

Good Health is Eye Safeguard

Life is a series of risks, adjustments and compromises. The physician's mission as a health counsellor is to avoid bad risks, make good compromises, and establish happy adjustments. Getting well is one of life's most thrilling adventures. Possibly getting sick is too, but most of us prefer other kinds of thrills. It has been said that we never miss the sunshine until the shadows fall, and often

we don't think of health until beyond recall. Many patients cannot realize that their symptoms are the result of an accumulation of health insults, usually over a period of years.

The complexity of modern medicine often increases the physician's difficulty in keeping before him simple practical fundamentals and avoiding scientific technicalities which may even confuse the basic and vital problem of getting well as quickly, simply, completely, and pleasantly as possible. Strange as it may seem, it is sometimes very difficult to avoid making the cure worse than the disease.

It has been said, and not without reason, that as we gain in education, we lose in intelligence, or the ability to think for ourselves. Although awful crimes and ridiculous mistakes have been committed in the name of health, the only remedy is more education and greater intelligence in the development and care of life's most wonderful machine, the human body.

Community Enterprise in Preventing Blindness

C. Edith Kerby

FOR the many communities and volunteer groups who seek to assume a more active part in sight conservation, this outline may suggest special, needed projects

THERE is no more satisfying human experience than the realization that one has made some contribution to the welfare of the community of which one is a part. Many important advances in civilization have been brought about through the stimulation of this service motive. In particular it has served well organized movements such as prevention of blindness. The National Society for the Prevention of Blindness looks to the active co-operation of people in all sections of the country, representing all groups in society, for only in this way can its influence be made to reach those who are most in need of advice or service and those who are in a position to see that needed facilities are provided. This Society takes particular pride in the number and variety of groups that have been enlisted for prevention of blindness activities.

Among the volunteers whose contribution is highly valued are the community clubs having a strong sense of civic responsibility. Frequently requests come to us from such organizations wishing to become acquainted with activities for the conservation of vision and the prevention of blindness and to improve eye health programs in their own communities.

Some of the outstanding efforts of community groups merit special mention. The circulation of an outline on conservation of vision, prepared from the Society's material, through the channels of the National Council of Jewish Women has been most inspira-

tional. The Lions Clubs in many sections of the country make it one of their functions not only to provide eye care and glasses for children in need, but also to promote education of the general public in prevention of blindness. The Summer Round-Up of the National Congress of Parents and Teachers has made a large part of the nation conscious that eye health begins in early childhood, and that vision testing of the child who has not yet learned his letters is a practical possibility. The League of Women Voters, the International Federation of Catholic Alumnae, local child study groups, women's clubs, posts of the American Legion, and civic improvement groups, have sought from the National Society for the Prevention of Blindness information on various phases of prevention of blindness and where and how that information might be put to practical use in the community.

Of special interest in these days of non-competitive "made-work" projects are the many conservation of vision programs being put into effect in various parts of the country by government agencies. Under the auspices of the Federal Emergency Relief Administration, activities and programs for eye health and sight conservation of young children have been put into effect in several states. The Civil Works Administration has made eye health in industry a part of its re-employment and re-education plan. Throughout Civil Conservation Corps camps, eye health education has taken the form of lectures, showing of the Society's film, "Preventing Blindness and Saving Sight," and distribution of pamphlets. Special projects to conserve vision may be carried on in other localities with similar co-operation and with similar benefits to the participants and to the community at large.

In presenting a survey outline for the use of these volunteer groups, it is the intention of the National Society for the Prevention of Blindness:

- (a) To present the essentials of a well-rounded program, together with some definite suggestions as to the means by which desired ends may be achieved;
- (b) To give the community a measuring rod by which to check the extent and effectiveness of work already under way;
- (c) To stimulate the interest and active co-operation of volunteer groups in the community program.

The value of such a survey lies not in any presentation of its findings as such, but in the activities which grow out of it. The purpose of the outline will be achieved if, upon completion of its survey, an organization has found at least one phase of the program in which it is willing to participate. In general, our advice to club leaders is that they use the guide to find out what is already being done in their communities and then select from among the needed services some project suited to the interests and abilities of members.

Outline of Prevention of Blindness Activities

A. Prevention of congenital eye defects due to venereal diseases

It is desirable that every pregnant woman have laboratory examinations to detect the presence of gonorrhea or syphilis in order that the infected mother may be brought under treatment and her baby saved from blindness or serious eye defect (or other handicaps) which are due to venereal disease.

Are laboratory tests for gonorrhea and syphilis advocated in prenatal literature distributed by: the state health department? the local health department? others?

Is this examination procedure practiced routinely in local hospitals and clinics having prenatal and obstetrical departments?.....

B. Prevention of babies' sore eyes (ophthalmia neonatorum)

Immediately after birth prophylactic drops should be put into the baby's eyes to prevent a serious eye infection.

Is this procedure advocated in infant care literature distributed by: the state health department? local health department? others?

If your state has a school for the blind, find out the number of new admissions in the last school year. In how many of these new admissions was blindness due to babies' sore eyes? How many of them were born in your community?

Does your state have a law (or a health department regulation having the force of law) requiring the use of a prophy-

lactic in the eyes of the newborn? Is it required for all live births? If not, what are the exceptions?

If midwives are permitted to practice in your state, does the health department take responsibility for their training? supervision?

Are free prophylactics distributed by: the state health department? the local health department?

In cases in which infection of a baby's eyes occurs, it is essential that the infant have *immediate* medical care (preferably by an ophthalmologist) if blindness or serious impairment of vision is to be averted.

To whom should suspected cases be reported in your community? Is such person authorized to secure treatment for the patient? What is the procedure? Would the same procedure be applicable to cases of secondary infection or similar infections occurring in older age groups?

C. Care of the eyes during preschool age

Strabismus (also called squint or cross-eye) is a defect occurring in early childhood. If treatment is not begun before school age, the child may lose all useful vision in the squinting eye and may develop personality difficulties as well.

Have the facts about strabismus been presented to parents in your community during the past year by: radio? lecture? newspapers? special pamphlet or letter from the health department?

Is there a squint clinic for indigent cases attached to some local hospital or health center?

The vision of a young child has an important bearing upon his physical and mental development. Vision tests may be given to children as young as three years.

Are vision tests made a part of the health examination of preschool children: in health centers? in summer round-ups of children entering school for the first time? in kindergartens?

D. Care of eyes during school age

Vision testing and eye inspection to detect children needing ophthalmological examination should be part of the health examination of all school children.

Are all schools provided with artificially lighted charts for vision testing? How frequently are routine vision tests made in the schools? and by whom?

Do the schools keep a record of the eye condition of each child referred for ophthalmological examination?

Does the record include the ophthalmologist's findings and his recommendations as to treatment, re-examinations, and adjustment of eye work in the classroom? Is the record continuous throughout the child's school life? Is it made available to each of the child's teachers?

Is there a regular follow-up procedure to secure correction of vision defects or treatment for eye diseases?

Are there adequate community facilities for the care of the indigent child requiring: clinic examination? hospitalization or treatment? free or part-pay glasses?

Classroom environment and methods are important factors in the eye health and conservation of vision of the pupils.

Has your school department set up any regulations on school lighting? What are the requirements? How do they compare with accepted national standards? (See *Standards of School Lighting*, published by American Standards Association.)

Has any school had a recent check-up of classroom equipment and methods from the point of view of eye care? *

Children who are not blind but whose vision is so poor as to make the use of ordinary textbooks, etc., difficult or unsafe should be educated in special sight-saving classes having a specially trained teacher and using special equipment and methods.

* An Appraisal Form, setting forth the essentials of schoolroom environment recommended for the conservation of vision of school children, is included in the Society's publication No. 143, "A Program of Eye Health in a School System." The publication is available without charge upon request.

Are there any sight-saving classes in your community?
 What is the total number of pupils in sight-saving classes? Estimating that one child out of 500 will need sight-saving class training, approximately how many pupils in your community should be in sight-saving classes?

Does your state make special financial provision for sight-saving classes? What is the amount?
 How may your school board get authority and help in establishing sight-saving classes?

If your community has not enough children for a sight-saving class, what special provision is made for the child who needs this attention?

Community health and education facilities should be available to all children irrespective of race, religion, etc.

If there are groups of children whose schools are under separate management, (such as private, parochial, and Negro schools) do they have the same facilities as other children in all items noted above?

E. Prevention of eye accidents

It is a community responsibility to see that no child or adult suffers blindness or permanent eye injury from preventable accidents. Safety education and safety regulations are the most important means of preventing such accidents.

Is any responsibility for safety education assumed by:
 school department? health department?
 labor department? other official or lay groups in your community?

Does your state or local community have laws or ordinances prohibiting the possession or use by minors of: fire-works? air rifles, slingshots or other toy weapons?

By what means are the eye hazards to children brought to the attention of parents?

Does your state have any industrial safety code or regulations in which the use of goggles is required for certain occupations? what occupations?

Among the large industries in your community, which ones:
 have safety departments?
 provide for eye examinations prior to
 employment? provide for periodic re-
 examination during employment?

F. Education of the public on eye care

The responsibility for the care of his own eyes rests primarily with the individual who should be taught the importance of good eye habits and periodic examination.

Is this phase of public education being handled by some other group in your community? Can you arrange to supplement this by the use of: lectures? films? posters? leaflets? radio? local papers?

Periods of severe illness (especially the childhood diseases—measles, scarlet fever, etc.) sometimes result in permanent impairment of the eyes. This need not occur if the eyes are watched and cared for during illness and their use in close work restricted during convalescence.

Do health department bulletins on communicable diseases give information on eye care? Are these instructions presented to your community: by lectures? by radio? by local papers? by leaflets? Do teachers make adjustments in eye work for children returning to school after serious illness?

G. Facilities for eye care

Facilities for eye examination and treatment should be available to all groups.

Does your community have the following: Ophthalmologists (physicians specializing in eye care)?
 Eye departments in some or all of the hospitals?
 Eye clinics?

If eye service is not available in your own community, do you have occasional eye clinics conducted by ophthalmologists from outside? Do school or other authorities

assume any responsibility for sending cases for treatment elsewhere?

No person having a vision handicap should be placed in an institution for the blind, workshop, etc., until the cause and extent of his defect have been determined by a complete ophthalmological examination.

Do all organizations caring for the blind in your community require ophthalmological reports? Do such organizations make provision for surgical or medical treatment for persons whose sight can be restored or improved?

Is trachoma a problem in your community?

If so, what special provisions are made to give examination and treatment for this disease?

Many eye clinics have the services of medical social workers with special training in eye work to assist the ophthalmologist in interpreting treatment to the patient and to make necessary social adjustments to keep under treatment the patient with an eye condition which may lead to blindness.

Do your eye clinics have medical social eye workers? If not, can the hospitals be helped or influenced to obtain such service?

H. Organized work for conservation of vision and prevention of blindness

As in other fields of activity, the best results are obtained through co-operation and experienced leadership.

Is there any organized society or committee responsible for conservation of vision and prevention of blindness activities in your community? Have its officers any public authority? Are the workers paid or volunteer? Does at least one worker have special training in eye work?

Are the following individuals contributing to the program: health officer? school superintendent? ophthalmologists?

Are local clubs or other volunteer groups co-ordinating their activities instead of working independently?

Community Opportunities for Improvements in Local Programs

Methods which may be used by community organizations to bring about improvements in local programs are:

- Stimulation of public opinion to bring about desired action such as legislation or appropriations

- Demonstration projects to prove the value of certain types of work

- Volunteer service in activities organized by official and semi-official groups

- Financial contributions to organized activities

- Education of the public by lectures, radio, etc.

- Investigation of practices and facilities

Specific information on work already under way and advice in planning new activities may be had from:

- State societies for prevention of blindness

- State commissions for the blind

- State and local boards of health

- State and local boards of education

- Medical societies

- Public health nurses

- Local hospitals and clinics

- Welfare agencies

Editorials

Annual Meeting and Conference

WHEN, in 1908, five determined people met and formed the nucleus of what later became the National Society for the Prevention of Blindness, they were inspired by the plight of little children, needlessly blind. That they did not work in vain, that the goal which they sought was realizable, that their dream of preventing blindness has grown to extend beyond one group to make itself felt in nearly every walk of life—these realities were strikingly seen at the annual meeting and conference of the Society held December 6, 7, and 8, in New York City.

Sounding the keynote of the conference was the address at the annual meeting of Dr. Edward Jackson, who talked on "The Broad Basis for the Prevention of Blindness."* More than 250 members and friends of the Society demonstrated by their presence their interest and participation in the activities of the Society. Following the Society's endeavor to take a part in helping any agency of society in whatever responsibility it may have for the conservation of vision, the conference sessions covered wide fields of investigation. "Contribution of Statistics to the Prevention of Blindness," a round-table discussion in co-operation with the American Foundation for the Blind, presented the work and the future possibilities of the Committee on Statistics of the Blind, from the angle of the statistician, the ophthalmologist, the organization for the blind, and the worker for prevention of blindness. A luncheon session—"Eliminating Fireworks Accidents"—outlined significant recent developments which offer substantial hope for the elimination of fireworks accidents, and presented a plan for more effective control of the use of fireworks than has heretofore been possible. At the session on "Prenatal and Congenital Infection in Relation to Blindness and Impaired Vision" in co-operation with the American Social Hygiene Association, a syphilologist, an ophthalmologist, and a public health official presented various

* Published in this issue of the REVIEW, p. 243.

aspects of the subject. Of particular interest to sight-saving class teachers was the round-table for supervisors, teachers and others directly or indirectly connected with sight-saving class work which was devoted to informal discussion of the special problems in this field of education.

Not only were the papers at the conference of first importance, but the responsiveness of the audiences—physicians, educators, social workers, nurses, safety engineers, leaders in social activities and students—led to stimulating discussion of the papers and the presentation of many points of view. The editors of the *REVIEW* are happy to announce that the coming issue will be devoted exclusively to papers and abstracts of the discussion presented during the three-day conference.

William Campbell Posey: 1866–1934

The sudden death of William Campbell Posey on September 5, aboard the S.S. Rex in the Bay of Naples, came as a sad shock to his many friends and co-workers. A Philadelphian by birth, Dr. Posey helped to make the world conscious of the possibilities and the need of conservation of vision. Space does not permit publication of the many tributes to the memory of Dr. Posey which the National Society has received, and must be limited to the following quotations from two who were closely associated with him, first, as an ophthalmologist, and, second, as a force in the movement for prevention of blindness. Dr. Samuel Horton Brown, a colleague formerly associated with Dr. Posey in Philadelphia, said of him: "Here in Pennsylvania Dr. Posey was responsible for the first Committee on Conservation of Vision of the Medical Society of the State of Pennsylvania. Almost single-handed, without any financial budget from the medical society, he effected legislation regarding ophthalmia neonatorum and trachoma, as well as the follow-up work on the educational aspect. His capacity for work of this type was unlimited. . . . Under the inspiration of this indefatigable genius, the Committee on Conservation of Vision of the Medical Society of the State of Pennsylvania was revived in 1933 and a state-wide program utilizing subsidiary county medical societies was inaugurated. . . . His untimely death deprives this project of the impelling force so essential to such enterprises,

but his inspiration still survives and the continuation of this work by his loyal associates will be a permanent tribute to his memory."

In honoring Dr. Posey as a member of the National Society for the Prevention of Blindness, Dr. Park Lewis, vice-president, said: "Dr. Posey was one of the most understanding of the medical men who had associated themselves with this great humanitarian movement from the beginning. He was always the scientific ophthalmologist, but he had as well the imagination necessary to realize the needs of those who knew little of eyes and their care. He made himself, therefore, an invaluable liaison officer between formal medicine and the public. He stimulated the members of the American Medical Association, of the American Ophthalmological Society, and of the American Academy of Ophthalmology and Otolaryngology to sponsor preventive measures as no other member of these organizations could have done. He activated the health boards, and he brought to our discussion seasoned judgment which could always be depended upon."

The Forum

THIS section is reserved for brief or informal papers, discussions, questions and answers, and occasional pertinent quotations from other publications. We offer to publish letters or excerpts of general interest, assuming no responsibility for the opinions expressed therein. Individual questions are turned over to consultants in the particular field. Every communication must contain the writer's name and address, but these are omitted on request

Preventing Blindness Throughout the World*

Colonel Robert Ingersoll once remarked rather irreverently that if he had been God, he would have made health catching instead of disease. As a matter of fact, constructive, health-producing ideas are more readily carried from one person to another than destructive, disease-producing ones. If this were not true, we could not have practically wiped out smallpox, yellow fever, diphtheria, typhoid fever and a host of other diseases that are rapidly diminishing in number and in deadliness.

This is especially true of that most dreaded affliction, blindness. To many persons the thought that the loss of sight when it occurs is not always inevitable will occasion surprise. Are not doctors, hospitals

and clinics, you ask, doing all that can be done to save our eyes? Surely, they are doing all they can and the splendid scientific advances for the restoration of sight to eyes already blinded are among the triumphs in modern science and surgery. Yet the fact remains that there are approximately 100,000 blind people in the United States, and that at least one-third of these need not have lost their sight, if the right thing had been done at the right time and in the right way. Of the two or three million blind people in the world probably half might still be seeing if the early conditions had been known and cared for before changes occurred for which no remedial measures are possible.

I welcome the opportunity to tell you briefly today what has been accomplished in preventing blindness in this country and throughout the world, what is hoped for in the development of this movement in

* Radio Talk, Station WEA, over Red Network, National Broadcasting Company, September 27, 1934, at 3.30 P. M.

the future, and how women can be of the greatest help in making this work effective.

We should realize that all blindness may be roughly classified in two groups: that which is inevitable and that which could have been prevented. Many from the first group are rapidly passing into the second. It used often to be assumed that accidents by which eyes were lost were unavoidable, but this is not always true. By the use of protective devices a large group of injuries including many burns, scalds and explosions that were once of common occurrence have been made relatively infrequent and numbers of eyes have been saved in consequence. Children are examined now in our schools and defects that were formerly overlooked are now discovered and corrected.

Twenty-five years ago the largest single cause of blindness in children was an infection which found entrance into the eyes of infants at birth. This came from the secretions of the infected mother. The inflammation which this produced was so severe that in many eyes the sight was lost.

Karl Cr  d  , a distinguished European obstetrician, conceived a happy idea. This infection did not occur very often, only in one out of every eight or ten births, but an occasional blind child here and another there made a fearful aggregate. "Why not," said he, "put a drop of a certain harmless germicide in the

eyes of every newborn child whether an infection is present or not? If the infection is there, it will be destroyed, and if there is no infection, it will do no harm." He tried this method in his own clinic and in the first 250 births there was not a single infected eye.

One would think that this would have stopped birth infections of the eyes throughout the world, but it took thirty years and the combined efforts of the 80,000 doctors of the American Medical Association, of all the health boards and of the National Society for the Prevention of Blindness to make this simple procedure a routine measure in the care of all newborn infants.

It took several years before the effects of this concerted movement became apparent. Then the number of young children entering the schools for the blind began to grow fewer. From 26 per cent the numbers dropped to 20 per cent, then to 18 per cent, then to 14 per cent, to 12, and it has now reached 7 per cent, a reduction of about 75 per cent in thirty years. Seventy-five per cent seems a tremendous reduction but thirty years is much too long to take for it. The other 25 per cent is equally preventable and should be entirely abolished without loss of time.

I have been talking about an infection that occurs after the child is born, and is called ophthalmia neonatorum.

There is a far more serious infec-

tion that reaches the developing child before it is born. It causes not only blindness, but often deafness and physical and mental deformities that last through life. And it is much more terrible because it does not show itself until the child is five or six years old or even older. It is the cause of more profound and varied manifestations of disease than almost any other single cause. How serious and how widespread this one cause is will be realized when I say that at least two per cent of all the children in the whole of the United States were infected in this way by their mothers before they were born. In the clinics, this infection is found in anywhere between eight and thirty per cent of the pregnant women.

The unborn child is infected in the early months of pregnancy. But a fortunate and happy feature of this condition is that, if it is discovered early and the mother is adequately treated, the child will almost surely be free from disease. We find again a condition almost parallel to that of the infections that occur after the birth of the child. The presence of infection in these prenatal cases can be found by a blood test and state laboratories will make this without cost. These tests should be a routine in the case of every woman at the beginning of her pregnancy. If the woman is free from infection no harm is done, but if the infecting organism is in her system it gives an

opportunity for its treatment and the protection of both mother and child. Indeed, a medical certificate showing freedom from serious infectious disease should be an invariable prerequisite for both the man and the woman before the issuance of a marriage license. Then all who need medical treatment to prevent the frightful calamities which might come to their children may have it provided for them.

Women's organizations can be of immense aid in this movement. You, who are prominent in any organization, let your members know these facts. Will you not ask a doctor or a health official in your community to tell your group what you must do to protect yourselves and your unborn children from a menace that may cause them to be blind?

I have said little about the world movement because that which is being carried out in America is typical of that which is rapidly being developed throughout the world. Medicine and science have no boundaries. And so close are our means of communication today, so interdependent are nations one on the other, that what happens in India, or China, or Russia, or Japan today influences the life and activities of those of us in the United States.

In 1929, at the close of the Ophthalmological Congress held in Amsterdam, the International Association for Prevention of Blindness was organized and the International

League for the Control of Trachoma was founded.

Trachoma, or granulated eyelids, is one of the great plagues of parts of Europe and of the Orient. We have relatively little of it here.

The president of the International Association for Prevention of Blindness is Professor de Laperonne, one of the greatest of the French ophthalmologists, and the president of the International League for the Control of Trachoma is Professor de Grosz, a Hungarian of equal eminence. At the last meeting of these two great organizations, founded five years ago, twenty-six nations were represented. They are in close accord with our own National Society for the Prevention of Blindness, and hope to attain in their countries the advances already achieved in the United States.

PARK LEWIS, M.D.

Vice-President, National Society for
the Prevention of Blindness

Leisure Time Activities for Sight-Saving Class Pupils

In approaching the question of the use of leisure time by pupils in sight-saving classes, it must be borne in mind that among these children there will be found quite as wide a variety of personalities, abilities, traits and aptitudes as will be found in any other group. Hence an attempt to lay down specific activities for the group as

a whole would be predestined to failure.

Modern education stresses accentuating the strength of the child through a knowledge of his own desires. It would, therefore, seem that the first requisite for suggesting leisure time activities is to find out what those desires are. This is much more possible in sight-saving classes than in regular grades: first, because the groups are so much smaller that there is greater opportunity of working and playing with the individual; and, second, because such children remain, for the most part, much longer with one teacher. Hence, even baffling personalities have just that much longer to evince their peculiarities.

The teacher herself must be particularly resourceful. She must have not only a variety of suggestions to make, but she must be cognizant of the mental, the physical and the social possibilities of her pupils if she is going to be able to help them in any sense to choose wisely. Thus she must know whether the family belongs in a reading group, in an intensely pleasure-seeking group, or, perhaps, in the group that is haphazard in its use of leisure time because of its inability to meet economic conditions.

In the reading group the temptations for the sight-saving class child to do close eye work at home are great because of example and

propinquity. For all children, but particularly for this group, the teacher of the sight-saving class will emphasize the art of listening—the use of ears instead of the use of eyes—carrying still further the suggestion of the White House Conference that the remaining strength is of greater importance than the special weakness. A child who has learned to listen understandingly will not only develop power of concentration for his school work, but will open up for himself an almost endless vista of leisure time activities—listening to music, to the radio, to the talking book or to reading aloud by some member of the family.

Outdoor recreations should be accentuated for leisure time, and one of the finest mediums through which to interest the sight-saving class child is the Boy or Girl Scout troop—not special troops of sight-saving class children, but regular troops in which the partially seeing child may take an active part. The new *Girl Scout Handbook* now reproduced in large type will aid greatly to make participation in these groups possible.

In such districts as they are practical, flower or vegetable gardens are a source of almost endless pleasure and interest.

In foreign countries the visitor notices especially that children sing and dance much more than in America. Is there any reason why sight-saving class children should

not take part in folk dances and community singing as a part of their leisure time activities? A small amount of orchestral work is made possible either by teaching the music through ear, or by translating the notes into numbers prepared in large type.

The possibility of grinding special lenses from non-shatterable glass should obviate many of the difficulties arising from the possibility of accident in play. There are, of course, numerous games in which some partially seeing children cannot participate because they cannot see the objects used in these games, such as balls. But there are a host of other games in which they may take part. Directors of playgrounds, if they understand the possibilities as well as the limitations of the partially seeing child, will be able to help in increasing the number of games in which they may take part.

Carefully guided gymnasium activities offer other leisure time opportunities. Since all children in sight-saving classes are considered individually, there will be found some who can undertake practically all the usual gymnasium work as it is offered by Y.W.C.A.'s, Y.M.-C.A.'s, Y.W.H.A.'s, Y.M.H.A.'s and settlement groups.

Ophthalmologists are throwing new light on what may be accomplished for children with some eye conditions in which the eye needs education, such as cross-eyes. The

principle underlying this training is to give the eye something so interesting to see that it will make the necessary effort. Many games may be used under the direction of the ophthalmologist and, as a late development, an occasional motion picture. The film of the Three Little Pigs has encouraged many a lazy eye to work. Surely this is a new and welcome attitude to many who have heretofore felt that moving pictures should be forbidden to all children who have any eye difficulties.

There are long evenings at home when other members of the family are reading or writing. Is there any reason why the child who has an aptitude for the making of stories should not write his original version on the typewriter if one is available? Typewriting well taught in the sight-saving class will make this leisure time activity pleasurable and profitable.

There are always eager hands that are trying to find something to do. Here is a girl who has an artistic sense of color and costume.

Instead of being tempted to sew, why can she not make and dress, with paper and paste, model dolls, arraying them in the newest styles?

The little epicure who has learned to concoct luscious cookies in the domestic science class will get real joy out of making a batch of these palatable dainties for the family.

How about fingers that are positively itching to mold pliable materials, clay, plasticene, etc., into something worth while? Will it not be possible at some time to have a kiln where pottery may be baked and the results of these leisure time activities be made to take more permanent form? How about giving other fingers a hammer and some odd bits of lumber to be transformed into a bird house or a bench?

The modern school is the place to encourage creative activities and so to train all children that they may find expression in those things for which they are normally suited.

WINIFRED HATHAWAY

Associate Director, National Society
for the Prevention of Blindness

Note and Comment

Lighting Course for British Health Officers.—Now included in the curriculum of the London School of Hygiene and Tropical Medicine is a course in lighting practice. A lighting demonstration room has been equipped with several methods of lighting, and is used to show post-graduate students the advantages resulting from good lighting and the bearing that light has upon both economics and health.

Increased Protection for Pennsylvania Children's Eyes.—Better care for the eyes of children is the mainspring of action of the Committee on Conservation of Vision of the Medical Society of the State of Pennsylvania. An effort is being made to see that all communities are acquainted with accredited ophthalmological services, both in private practice and in clinics or dispensaries. The development of local committees has greatly aided the spread of information on means of conserving sight; publications, slides and films on eye care have been effective weapons in the campaign for general eye hygiene education.

National Council of Jewish Women Outlines Prevention of Blindness Activities.—An undertaking of significance in the conservation of sight is the outline prepared and published by the National Council of Jewish Women on which local councils may base sight conservation activities. Its specific objectives are: "To study the sight conservation needs of the community and the existing facilities for meeting these needs. Learn what can be done in a community for sight conservation and then find out if, and to what extent, it is being done in your community. Co-operate with public authorities and other organized groups in the community, but do not attempt to undertake too much at one time." Education, organized effort and legislation are recommended methods of work. The National Society for the Prevention of Blindness was consulted, and co-operated in working out the plan.

New Publication for Work with Blind and Partially Sighted.—

Of special interest to readers of the REVIEW is the first issue of *Archiv für das Blindenwesen und für die Bildungsarbeiten Seh-schwachen*, a German journal devoting its pages to questions of work with the blind and the partially blind. Director S. Altmann, of Vienna, is its editor, and on its editorial board are such familiar names as Dr. E. E. Allen, Prof. M. Bartels, Mr. R. B. Irwin, Dr. M. Meissner, and Dr. J. Redslob. The editor solicits communications in this field in English, French and Italian, which may be sent to him at Hohe Warte 32, Wien XIX, Austria.

New Sight-Saving Classes.—Despite cuts in appropriations for education in many communities in the United States, 24 new sight-saving classes have been opened since the beginning of the school year in September. Among the cities making additional appropriations for sight-saving classes are: Louisville, Kentucky; Fall River, Massachusetts; Auburn, Buffalo, Dunkirk, Ithaca, Long Beach, New York, and Yonkers, New York; Dennison, Gallipolis, Hillsboro, Ironton, Newark, Portsmouth, and Steubenville, Ohio; Providence, Rhode Island; Los Angeles, California; Chicago, Villa Park, Joliet, Champaign, Freeport, and Elgin, Illinois; and Honolulu, Hawaii.

Ophthalmia Neonatorum Still a Problem in Prevention.—Although ophthalmia neonatorum was the first point of attack in the war on blindness, and is, in theory, completely conquerable, it still commands the earnest attention of physicians, social workers and public health authorities. The percentage of children entering institutions for the blind because of ophthalmia neonatorum has fallen from 27 per cent to less than seven, and we can safely say that three-quarters of ophthalmia neonatorum has been prevented, but we cannot neglect the most stubborn quarter of all—that last quarter—the children afflicted with a disease which we know to be preventable. From Ohio comes the report that 1,059 cases of ophthalmia neonatorum were reported during the year 1933, of which 21 were due to gonococcal infection. Prompt action on the part of the medical and nursing forces and thorough, constant care saved the sight of 20 of the 21 infants. What to do to prevent

ophthalmia neonatorum, and how and where to obtain the all-important care for those cases that develop are tersely outlined in a bulletin recently issued by the New York State Commission for the Blind to social agencies, physicians and nurses. In a five-year period in New York State, 19 babies completely lost vision, and 16 others have impaired vision because, somewhere along the line, someone did not take the needed step at the proper time.

An editorial comment in the September issue of the *American Journal of Public Health* says that the introduction of Cr  d  's technique was the first step; compulsory notification and treatment made the second advance in the reduction of blindness from this cause; better training of obstetrical attendants is apparently the next step to reduce further this disease which should be a medical and social rarity.

A recently reported study, made under the auspices of the Philadelphia Conservation of Vision Committee, with the co-operation of the Civil Works Administration, and sponsored by the Committee on Conservation of Vision of the Medical Society of the State of Pennsylvania, the Department of Health of Philadelphia and the Philadelphia Health League, demonstrates that application of silver nitrate alone is not sufficient protection in every case. Prenatal care and careful technique are important factors in complete prophylaxis.

However, an analysis of birth certificates in New York State, exclusive of New York City, made by the state Bureau of Vital Statistics, shows that even silver nitrate prophylaxis is far from being universally applied: 3.6 per cent of live births in hospitals, and 4 per cent of births where physicians officiated did not receive prophylactic drops. Little or no difference is seen in the percentage for white and colored babies, or in the percentage for those having native or foreign-born mothers, but when the attendant at the birth was neither a midwife nor a physician, the percentage of those not receiving protective drops rose abruptly. As is to be expected, in the illegitimate births twice as large a percentage of babies did not receive drops as in the legitimate births. When it is still possible for 458 babies born in New York State not to receive any protection against a disease that so often has dire results; when it is possible that in 331 instances physicians

did not take the precaution of which they cannot fail to be aware; the campaign against ophthalmia neonatorum needs to be continued on every front.

Washington Squint Clinic.—Estimating that two out of every hundred children have cross-eyes, Washington ophthalmologists have welcomed the establishment of a squint clinic at the Children's Hospital. Once the period of fusion development has passed (usually about six months of age), no child is too young to begin treatment for correction of cross-eyes. In the Washington clinic, an eight-months-old baby was recently fitted with frames; as soon as the frames became familiar, lenses were added, and the process of treatment and training was begun with every expectation of early correction.

Improved Lighting Is Reflected in Class Work.—Keeping classroom illumination at a constant, efficient level showed definite improvement on the part of pupils, according to an experiment made in the Mt. Lebanon (Pennsylvania) school. Two classrooms, alike in every respect but illumination control, and two groups of children whose mental and achievement levels were similar, furnished material for the experiment. Classroom "M" was lighted by four 100-watt globes. Classroom "A" was lighted by four 500-watt globes, and the switch was controlled by a photo-electric relay which turned on the supplementary illumination when daylight fell below 12 foot-candles and turned it off when the light measured 14 foot-candles or more. Since other factors were equal, it is assumed that the constant, adequate level of illumination was responsible for:

1. The pupils in room "A" showing approximately 28 per cent more improvement than the pupils in room "M."
2. The pupils in room "A" being more alert and responsive; there was no lack of enthusiasm because a day was dark and dreary. The group in room "M" reflected the weather.

The teachers, too, who had been skeptical of the experiment in the beginning, felt the benefits of the automatically lighted room.

Pittsburgh Seeks Reduction of Fireworks Accidents.—An ordinance has recently been passed in Pittsburgh regulating the sale of fireworks and making it unlawful to use, discharge, ignite or other-

wise set in action fireworks, firecrackers, sparklers, or other pyrotechnics by any person, firm, or corporation within the limits of the city. Special public displays of fireworks, by properly qualified persons, may be permitted upon application made thirty days in advance. The passage of this ordinance through the City Council and its repassage over the Mayor's veto is encouraging because it shows that men of responsibility are aware of the hazards of fireworks; unfortunately, it cannot protect those children whose parents are foolish enough to provide transportation to the outskirts of the city and money for the purchase of firecrackers and other explosives.

Prevention of Blindness in Brazil.—Because of the physical expanse of the country, and of the variety of health problems found there, the Brazilian Committee of the International Association for Prevention of Blindness has devoted its efforts to establishing local groups for active field work in the prevention of blindness. At the All-Brazilian Ophthalmological Congress to be held at São Paulo, January 19 to 25, 1935, a meeting of the local committees of the Brazilian National Society for the Prevention of Blindness has been called, at which steps in continuing and expanding the sight-saving program will be discussed. Plans have also been made for sight conservation exhibits at the Congress, as well as a showing of the film, "Preventing Blindness and Saving Sight," loaned by the United States National Society for the Prevention of Blindness.

Typical of the organization and program of the local committees for prevention of blindness in Brazil is the announcement of the Santa Luzia Foundation in Salvador, Bahia, Brazil. It aims to:

1. Maintain a service for the prevention of blindness, promoting the spread of general eye care.
2. Maintain an out-patient service for aiding and treating the poor who are threatened with blindness because of accident or disease.
3. Promote general knowledge of vision, of causes of blindness, and of means of sight conservation, in factories, schools, etc.
4. Persuade engineers and builders to observe all the technical rules for distribution of light, particularly in schools, factories,

offices, etc., and demonstrate to students and workers the necessity for immediate treatment of any eye trouble before complications and blindness set in.

5. Promote a constant and systematic campaign among physicians, nurses, druggists and others, so that all persons may avail themselves of the free services of the Foundation if they suffer eye disease or accident liable to endanger sight.

Causes and the Prevention of Blindness.—Analyzing the causes of blindness in a study of 460 cases, in the September 15 issue of the *Medical Officer* (England), Dr. Matthew Burn and Dr. Philip Jameson Evans find that half of the blindness might have been prevented had care been taken at the proper time. Syphilis was the cause of nearly 18 per cent of the blindness; ophthalmia neonatorum caused nearly 14 per cent; among the cases were 21 blind persons with uncomplicated senile cataract, who, after operation, may again see. Nineteen per cent of blindness comes under the heading of inheritable, stressing again the need to clarify the demands of eugenists for voluntary sterilization or birth control for those who carry the genes of hereditary blindness.

The comparative costs for nine large local authorities show that the amount of money expended per head per annum for blind persons runs from £20 to £43; the expenditure for the welfare of the blind in Birmingham has risen from £12,000 to £26,000 since 1929. The authors conclude: “. . . the expenditure of monies for the prevention of blindness on the lines indicated could only result in a substantial saving to the local authority concerned—a saving not monetary only, but a saving of life—and would also mean an eradication of those cases of blindness which are the cause of so much suffering and yet are preventable.”

Sight Conservation Topics at State Meetings.—During the conference of the New York State Federation of Workers for the Blind, held in co-operation with the Central Association for the Blind of Utica, prevention of blindness was discussed at an evening meeting. Dr. T. H. Farrell spoke on “Prevention of Blindness Today”; “What Workers for the Blind Can Do to Aid in the Prevention of Blindness” was outlined by Lewis H. Carris, managing director of the National Society for the Prevention of Blindness.

An Eye Institute, arranged under the auspices of the New York State Commission for the Blind, bureau of prevention, with the co-operation of the Onondaga County Medical Society and the Syracuse Eye, Ear, Nose and Throat Club, was held for two days in Syracuse. Open to anyone interested in a better understanding of the eye, an opportunity was offered to learn about recent developments in the conservation of vision and the prevention of blindness, to participate in group discussion, and to meet fellow workers.

Vitamin A for Eyes.—Two sows, placed on diets adequate in every way but completely lacking in vitamin A, at the Experiment Station of the Texas Agricultural College, produced litters of eyeless pigs. This experiment confirms the work already done on rabbits and guinea pigs, and emphasizes the importance of a well balanced diet in a healthy environment for unborn young. In times when the dietary of so many persons is limited by lack of funds, the importance of providing all the necessary elements for life and development is again stressed.

Spreading Snare of Syphilis.—Jane, a twelve-year-old girl, was very fond of babies, as many little girls are, and when a new baby arrived next door, she was delighted that she might occasionally act as nurse. Even when the baby developed snuffles, Jane was helpful and tried to quiet his cries as she rocked him. Medical examination disclosed that the baby had congenital syphilis, and he was given all the care that the local clinic could extend.

A month later, the school nurse took Jane to an eye specialist for an eye condition that had recently developed. Not until a rash developed on the child's body was it discovered that Jane had contracted syphilis from the baby that she had so fondly tended. Had the mother been carefully examined during her pregnancy and treated, had all the family contacts been followed after it was discovered that the baby was afflicted, extensive treatments and possible future complications could have been avoided.

Lighting of English Factories.—Glare and general unsuitability of lighting systems, rather than inadequacy of illumination, are the principal faults of lighting systems in the large factories around Sheffield in England, according to the report of the chief inspector

of factories. Out of 425 factories visited, only 27 were found to possess up-to-date installations for illumination. When recommendations were made, conditions were improved in 128 plants; in 17 others plans are now being made to bring the lighting system up-to-date.

More Wrestlers' Trachoma.—Coincident with the popularity of wrestling in all parts of the country, reports from ophthalmologists of wrestlers' trachoma are also increasing. Two more cases are reported by Dr. William Zentmayer in a recent issue of the *Archives of Ophthalmology*. Because professional wrestlers are often moving from one city to another, treatment is sporadic; the results of serious impairment or complete loss of vision should impress upon health authorities and state boxing commissions the importance of making every attempt to reduce the prevalence of the disease among wrestlers.

National Society Notes.—Co-operating with the National Girl Scouts, Inc., the Society has helped to prepare and publish a Girl Scout handbook in large type. The book contains a general introduction to Girl Scouting, the Tenderfoot and the Second Class Scout; the material is presented in most attractive form, reproducing many illustrations, in large and simplified form, which appear in the regular *Girl Scout Handbook*. It is expected that the large type *Handbook* will effectively supplement the constructive use of leisure among partially seeing girls. The new publication was released in time for the National Convention of the Girl Scouts, Inc., in Boston, when Mrs. Winifred Hathaway, associate director of the Society, talked on "The Partially Seeing Girl in the Scout Troop."

Staff members have continued to meet the requests for service and consultation from many parts of the country. Mr. Lewis H. Carris, managing director, addressed the Eastern Conference of Home Teachers of the Blind in Pennsylvania, at Overbrook, Pennsylvania; at the meeting of the Philadelphia County Medical Society, Mr. Carris presented, in his discussion of Dr. Louis Lehrfeld's paper on "Ophthalmia Neonatorum," the Society's policies in publicizing the prevention of that disease. He also

spoke before the western zone New York State Teachers Association's section meeting on atypical children, on "The Eye Health of the Atypical Child"; at the Eye Institute of the New York State Commission for the Blind, he presided at the luncheon on illumination; Mr. Carris also attended the meeting of the New York State Federation of Workers for the Blind, where he talked on "What Workers for the Blind Can Do to Aid in Prevention of Blindness."

The Society has taken advantage of exceptional broadcasting opportunity during the past few months: Dr. Park Lewis, vice-president, talked over a network of more than forty stations on the "International Movement for Prevention of Blindness"; Dr. William F. Snow, general director of the American Social Hygiene Association and member of the Board of Directors of the Society, spoke over Station WABC on "Conserving the Sight of School Children"; and Mr. Carris, on a nation-wide hook-up of the Columbia Broadcasting System, talked on "The War Against Blindness." Other staff members gave radio talks on eye health, under the auspices of the New York Tuberculosis and Health Association, on local stations.

Mrs. Hathaway, as an authority on the education of visually handicapped children, was invited by the United States Office of Education to contribute to the program on the education of exceptional children. At the invitation of the head of the department of education for exceptional children, Mrs. Hathaway lectured at a course on atypical children, on "The Education of the Partially Seeing."

Announcement is made of the marriage of Miss Eleanor P. Brown, associate director, to Mr. Frank H. Merrill, of New York. Mrs. Merrill will continue her association with the Society.

The promotion of eye health among preschool and school children has taken Miss Mary Emma Smith, R.N., director of nursing activities, to county seats in Maryland, to Atlanta, Georgia, and to the larger cities in Florida. Dr. Anette M. Phelan, staff associate, has visited Eastern Kentucky State College at Richmond, Kentucky; Indiana University at Bloomington; and the Mississippi State College for Women at Columbus, to integrate eye health in teacher training institutions.

Current Articles of Interest

First Aid for Eye Injuries, Margaret Schaefer, *American Federationist*, October, 1934, published monthly by the American Federation of Labor, Washington, D. C. Every year there occur among workers thousands of cases of eye infections because of delay in getting competent first aid for minor eye injuries. The writer advises prompt reporting to the first-aid station for the removal of particles. Any penetrating wound of the eyeball should have the attention of an eye physician. The loss of an eye can never be compensated in money, and the worker himself must take responsibility for the protection and care of his eyes.

A Classification of Cases of Concomitant Strabismus Based on the Etiological Factor, M. A. Pugh, *British Journal of Ophthalmology*, August, 1934, published monthly by the British Journal of Ophthalmology, Ltd., London, England. In an analysis of 500 cases of squint, the etiological factor was sought, and it was found that error of refraction accounts for 62 per cent of the cases; fusion defects, which may have been primarily refraction defects, account for 15 per cent; psychological causes account for 21 per cent. Physical defects cause the remaining 2 per cent of the assembled cases of squint. The comparatively large proportion of cases having a psychological basis is interesting not only to ophthalmologists but to those dealing with the emotional health of children. Jealousy, fear, and demand for attention were emotional factors which reacted in crossing of the eyes.

Effect on the Eye of Yellow Light of the Sodium Vapor Lamp, James E. Ives, *Public Health Reports*, August 10, 1934, published weekly by the United States Public Health Service, Washington, D. C. Because of the growing popularity of sodium vapor lamps, especially in highway illumination, a test was made by the United States Public Health Service to determine the effect of the use of this type of light upon the eyes. The report of the investigation shows that there is apparently no effect, either beneficial or detrimental, upon the eyes working under sodium vapor lamps; although the subjects working by this type of lighting said that they liked the light, finding it soft and easy on the eyes, no differ-

ence in the quality or quantity of work produced by the "sodium" or the "tungsten" groups could be discerned.

Trachoma in the Indians of Western Canada, J. J. Wall, M.D., *British Journal of Ophthalmology*, September, 1934, published monthly by the British Journal of Ophthalmology, Ltd., London, England. The author, who presented this paper at the general assembly of the International Association for Prevention of Blindness and the International League Against Trachoma, in Paris, believes that while trachoma is as communicable as smallpox, education to raise the living standards and the hygienic level among Indian families will do much to reduce the incidence of the disease. Climate and rainfall have a definite secondary effect upon the incidence and severity of the disease, but, in the final analysis, cleanliness of personal habits and a realization of the communicability of the disease will bring a real decrease.

The New Science of Seeing, M. Luckiesh and Frank E. Moss, *Transactions of the Illuminating Engineering Society*, September, 1934, published monthly by the Illuminating Engineering Society, New York, N. Y. A résumé of the many research studies made to perfect the "science of seeing" through improvement in lighting. The authors would class with the eye specialist, the physician, the health official and the social scientist, the illuminating specialist whose activities are primarily directed toward human welfare and the conservation of human resources.

Visual and Orthoptic Training, Joseph I. Pascal, M.D., *American Journal of Ophthalmology*, September, 1934, published monthly by the Ophthalmic Publishing Company, St. Louis, Mo. Sight involves more than light striking the retina; it involves as well the brain or mind necessary to interpret into vision the light-image on the retina. The child with concomitant strabismus must learn to perceive the image which he has hitherto neglected. This essential learning is aided through visual and orthoptic training, guided by the physician's ability as a teacher in the technique of fusion and visual co-ordination.

Book Reviews

MANUAL OF THE DISEASES OF THE EYE. Charles H. May, M.D. Fourteenth Edition, Revised. Baltimore: William Wood and Company, 1934. 496 p. Ill.

In examining the fourteenth edition of this book, the reviewer remembers and repeats the encomiums which he has given to previous editions. This is the outstanding treatise on diseases of the eye, adapted for use by the student and general practitioner and, in addition, interesting to the ophthalmologist.

The first paragraph is in language that should be called again and again to the attention of the specialist:

"Ophthalmology is a branch of general medicine and surgery from which, in practice, it cannot be entirely separated. Examination of the eye does not mean merely the investigation of an isolated organ, but the examination of the *patient* with special reference to that organ and its functions."

The book contains in condensed form everything that is necessary for these three classes of readers—students, general practitioners and ophthalmologists—and is so exhaustive that it may be used as a work of reference in common with far larger treatises of one or a dozen volumes. The fact that it has been translated, with numerous editions, into Spanish, Italian, and even into three Chinese editions, indicates that it is appreciated by the profession and for many years, even after the lifetime of the author, will be the standard compendium of ophthalmology.

For this last edition, the book has been carefully revised, chapters rewritten, illustrations replaced, and brought thoroughly up to date. It is unnecessary in this review to give a digest of its contents. Suffice it to say that the fundamental facts of ophthalmology and space allotted to them are well balanced; rare conditions are merely mentioned and uncommon affections dismissed with a few lines. The commoner diseases, methods of treatment, and operations which the student must learn and which the general practitioner should know something about have been

described with comparative fullness. The illustrations are good, even those in colors; print and paper and format are also excellent.

The price of the book, only \$4.00, should appeal to the pocket of the average practitioner.

HARRY VANDERBILT WÜRDEMAN, M.D.

SEEING AND HUMAN WELFARE. Matthew Luckiesh, Sc.D. Baltimore: The Williams and Wilkins Company, 1934. 193 p.

Directors of research laboratories are not commonly noted for powers of vivid expression either in the spoken or in the written word. Dr. Matthew Luckiesh is an exception to this generalization. Since 1915 he has written a series of books on lighting. Some have dealt with the technical aspects of the matter; in others he has sought to bring technical achievements in illumination to the notice of the public. His latest book, *Seeing and Human Welfare*, is a typical piece of propaganda. His theme is the folly, the costliness and the danger of working or allowing anyone to work in poor light; and the wisdom, the economy, and the safety of providing a superabundance of light. In a former book his enthusiasm for artificial lighting led him to suggest its superiority over the variable natural light for interior illumination. Here his text might be the splendor of sunlight and the poverty of our common conception of artificial light. The intensity of illumination at midday in summer has been nearly as high as 10,000 foot-candles; even in the shade of a tree it is about 1,000 foot-candles. Daylight indoors is restricted by windows, and its distribution is often unsatisfactory; there may be 200 foot-candles near the window, and only two foot-candles ten feet away. A 100-watt lamp may give a light equivalent to 100 candles at a distance of one foot, but the intensity of illumination ten feet from it is about the same as that of one candle at a distance of one foot—a wholly inadequate light for detailed work. Dr. Luckiesh discusses the visibility of objects and the illumination required for various types of work. In all categories he demands standards about twice as high as are commonly accepted; and his standards, he says, are not ideal.

Editorial, *British Medical Journal*

Contributors to This Issue

Dr. Edward Jackson is called the dean of American ophthalmology. He is a consulting editor of the *American Journal of Ophthalmology*, and professor emeritus of ophthalmology at the Colorado School of Medicine.

Mrs. Gladys Dunlop Matlock, supervisor of Braille and sight-saving classes in Detroit, Michigan, is a member of the Board of Editors of the SIGHT-SAVING REVIEW.

Among British ophthalmologists, **N. Bishop Harman** stands out as one of the most active in promoting the myope, or sight-saving, classes. In addition, he is the author of several books, and his articles appear frequently in British and American medical journals.

Mr. Lewis H. Carris, managing director of the National Society, needs no introduction to readers of the REVIEW.

Dr. Charles A. Bahn, ophthalmologist in New Orleans, is president of the Louisiana Society for the Prevention of Blindness.

Miss C. Edith Kerby is statistician on the staff of the National Society and a member of the Committee on Statistics of the Blind.

Our book reviewer: **Dr. Harry Vanderbilt Würdemann** is author of *Injuries of the Eye*, and a practicing ophthalmologist in Seattle, Washington.

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Let There Be Sight!



THE National Society for the Prevention of Blindness is an incorporated lay organization engaged in a program of eliminating preventable loss of sight. It carries on the following services:

1. Preventing eye infections of newborn babies.
2. Preventing infant blindness or other eye tragedies from syphilis by recommending a blood test and the necessary prenatal treatment, where indicated, for every expectant mother.
3. Demonstrating methods of vision testing of preschool children.
4. Co-operating with educational authorities in establishing sight-saving classes, and training teachers for this special work.
5. Promoting the training and placement of medical social workers in eye hospitals and clinics.
6. Co-operating with industry to reduce eye injuries.
7. Promoting research into causes of blindness and impaired vision.
8. Helping to eradicate preventable eye diseases.

Literature, exhibits, films, lantern slides, lectures, charts and assistance in sight-saving projects are available on request.

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